ORDER NO. AD9502046C2

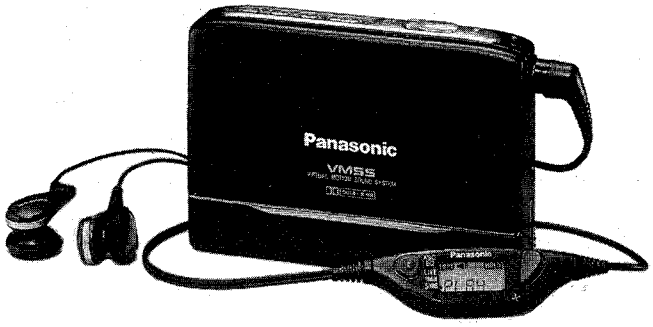
Service Manual

Mini Cassette

Stereo Cassette Player

DOLBY B NR*

RQ-SX44



Colour

(K)... Black Type

Area

Suffix for Model No.	Area	Colour
(E)	Europe.	(K)
(EB)	Great Britain.	

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AR90 (AR90IV) MECHANISM SERIES

SPECIFICATIONS

Power Requirement:	Battery; DC 1.5V one "AA" size (LR6) battery (not included) (Panasonic R6, LR6 or equivalent not included) Rechargeable Battery; DC 1.2V with an included Panasonic Rechargeable Battery (RP-BP62EYS1) × 1
Power Output:	5mW+5mW... RMS (max.)
Output Jack:	Headphones; 16Ω (mini jack Φ3.5)
Dimensions:	(W × H × D) 108.0 × 75.6 × 21.0mm
Weight:	190g (with rechargeable battery)

Charger: (E)	Input; AC 220V, 50Hz, 4W (RP-BC155EY-0) (included) Output; DC 1.2V, 350mA
(EB)	Input; AC 240V, 50Hz, 4W (RP-BC155EBYA) (included) Output; DC 1.2V, 350mA
Frequency Range: (−6dB)	15~20,000Hz (with a normal tape) 15~20,000Hz (with a CrO_2 tape) 15~20,000Hz (with a Metal tape)
Motor:	Electrical governor motor
Track System:	4-track 2-channel stereo playback
Tape Speed:	4.8cm/s

Note: Design and specifications are subject to change without notice.
Weight and dimensions are approximate.

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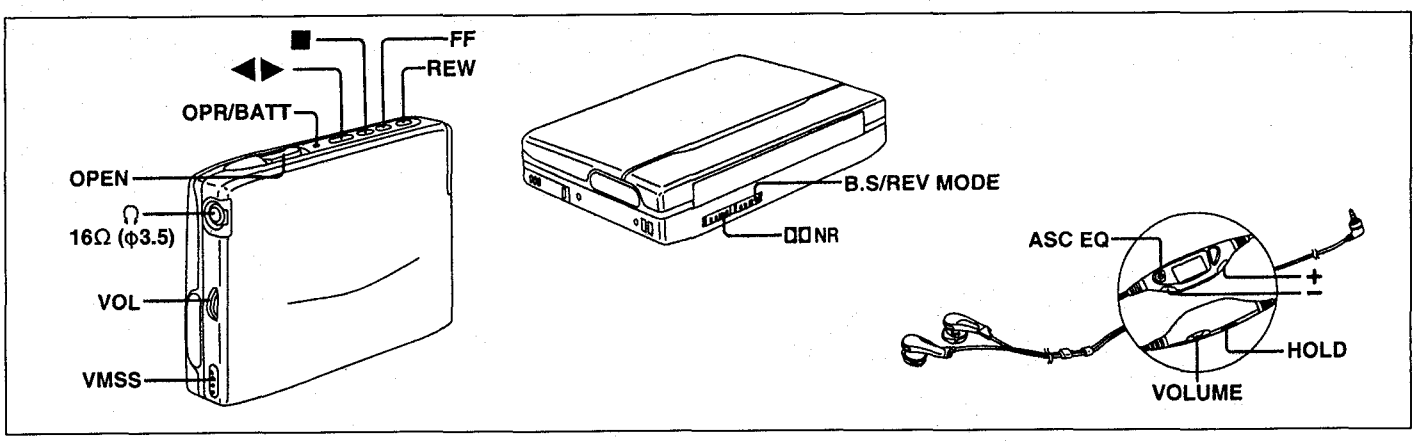
Panasonic®

■ LOCATION OF CONTROLS



■ POWER SOURCES

This player can operate on any of 2 different power sources:

1. Rechargeable battery (included)
2. Dry cell battery (not included)

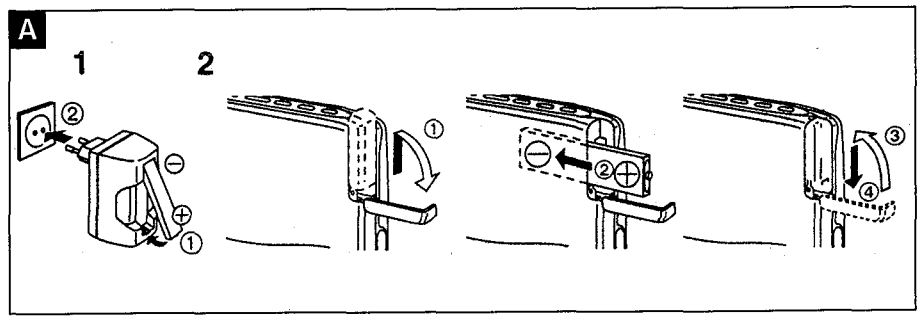
Rechargeable battery A

For its initial use after purchasing or after a long time interval (more than three months), be sure to recharge the rechargeable battery.

Normally 2 hours recharging will give approximately 6 hours tape playback (at 25°C).
However, playback time may become shorter depending on the operating conditions, e.g. repeating fast-forward or rewind, etc.

1 Recharge the rechargeable battery.
- For UK, the shape of the charger is different.

2 Insert the charged battery into the unit.

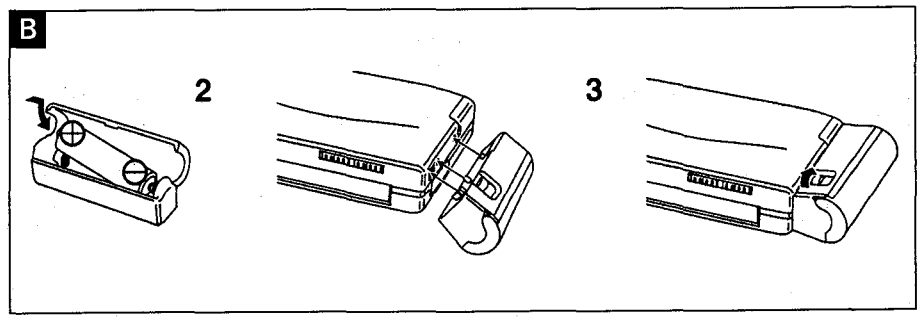


Dry cell battery B

1 Insert one R6/LR6 battery (UM-3 or equivalent, not included) into the battery case.

2 Attach the battery case to the unit.

3 Turn the screw until it locks.



■ To extend the playback time

Install both types of battery (rechargeable and dry cell battery) in the unit.

■ When the battery becomes weak

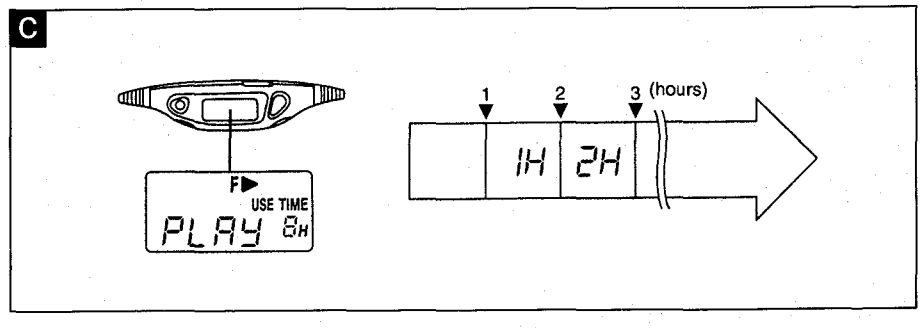
The OPR/BATT indicator will dim or turn off. Recharge the rechargeable battery or replace the dry cell battery with new one.

Use time indicator C

This unit adds up the total time hours since installing a battery. For example, when the unit has been operated about an hour, display shows "USE TIME 1H ", after about 2 hours display shows "USE TIME 2H ", and so on. The battery life may differ according to the condition of batteries used.

Notes:

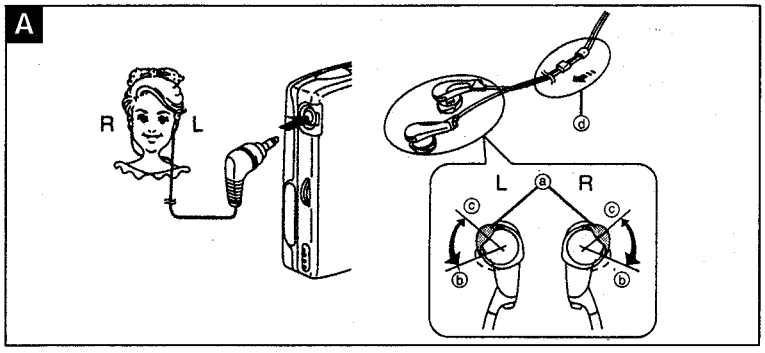
- Play time may be shorter depending on the operating conditions, e.g. repeating fast forward or rewind etc.
- Use time indicator will reset to zero when both batteries are removed.



■ BEFORE USE

Connecting the stereo earphones A

Unless the earphones are firmly inserted into the ∩ jack, the sound may become intermittent, or, operation using the remote controller may become impossible.
The size of the earpiece can be adjusted.
When it's too loose in the ear, turn the fitting ring (ⓐ) to ⓑ, when it's too tight, turn to ⓒ.
When not using the stereo earphones, slide up the slider (ⓓ) to prevent entanglement of the cord.



Concerning the hold operation

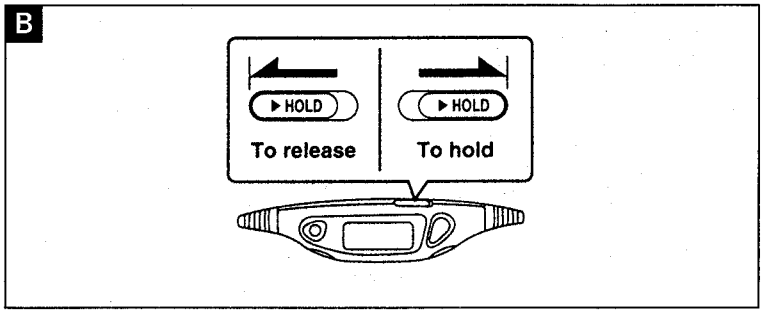
■ Main unit (Auto Hold)

This unit is equipped with an auto hold system which makes all control buttons inoperable. To release the hold state, simply touch any button.
Press buttons only with your fingers.

Note:
Keep the buttons clean and dry otherwise the auto hold system may not work properly.

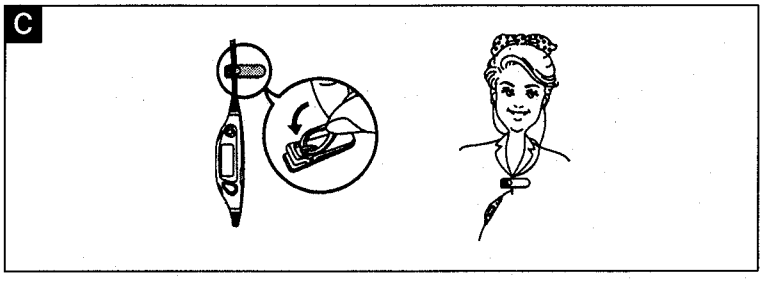
■ Remote control B

•To prevent unwanted operation
You cannot activate remote control buttons when the HOLD switch is set to HOLD (hold state). Before using remote control buttons, release the hold state. When the unit is in the hold state, the display shows HOLD.



How to attach the cord clip C

- Attach the clip to the cord protruding from the top of the remote control (earphone side) for use.
- In order to prevent the cord from being damaged, do not slide the clip along the cord once it has been attached.



■ REMOTE CONTROL OPERATION

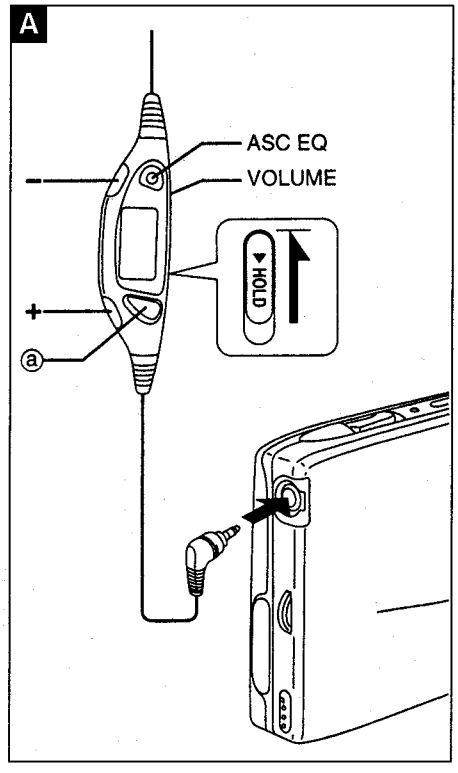
You can change the tape operation or tone quality with remote control buttons.
Before using those buttons, plug the stereo earphones into the ∩ jack and be sure to release the hold state.

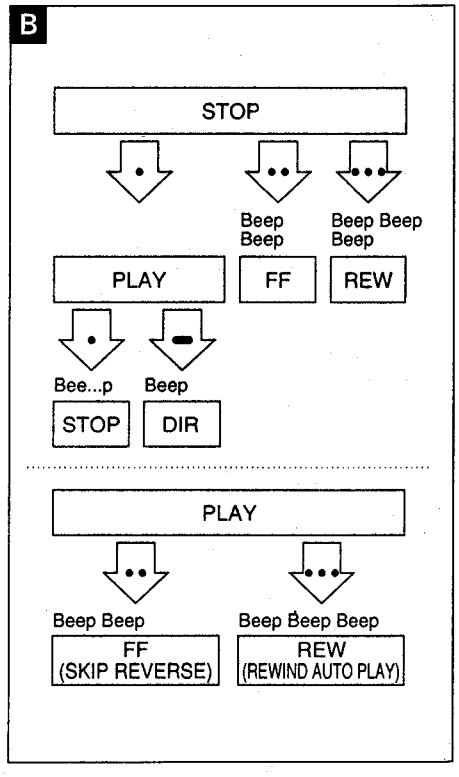
To change the tape operation B

Press the multi operation button. (A-ⓐ)

- •: Press once to play and stop.
- ▬: Press and hold to change the direction.
- ••: Press twice for fast forward.
- •••: Press three times for rewind.

- When pressing the button twice or three times in succession, press it within one second and at equal interval.
- When it is pressed twice or three times during play, play will start from beginning of the tape (opposite or the same side).
- Confirmation beep can be heard as shown on the figure.





To find the beginning of a song A

(TPS: Tape Program Sensor)
Press + or − once, twice or three times during playback.
+: You can skip forward.
−: You can skip backward.

To adjust the volume A

Before using the VOLUME on the remote control, be sure to adjust the volume control on the main unit to "5–7" position.

To change the Tone

■ To enjoy the amenity sound C (ASC EQ)

Every time you press ASC EQ the tone will change as follows in turn. (ⓐ Indicates the tone.)

- Confirmation beep can be heard as shown on the figure.

S-XBS:
Boosts the low frequency range.

- If the sound distortion occurs, turn down the volume.

TRAIN:
Gives a more natural quality to the sound and reduces strain and fatigue when you listen for long time. It also cuts down the audible level of sound which disturbs people around you.

LIVE:
Adds gloss to the vocal.

- This function may not be effective according to the source.

■ To enjoy the virtual motion sound D (VMSS)

It boosts the low frequency range. Also, the vibration of the earpieces of the included earphones makes sound vigorous.

Set the VMSS selector to ON.
Raising the volume level using the VOLUME control on the main unit intensifies the VMSS effect.

- The VOLUME control on the remote control can not be used to change the VMSS effect.
- VMSS may not effective according to the source.
- When the VMSS selector is set to ON while ASC EQ is canceled, S-XBS automatically appears as the sound quality display.

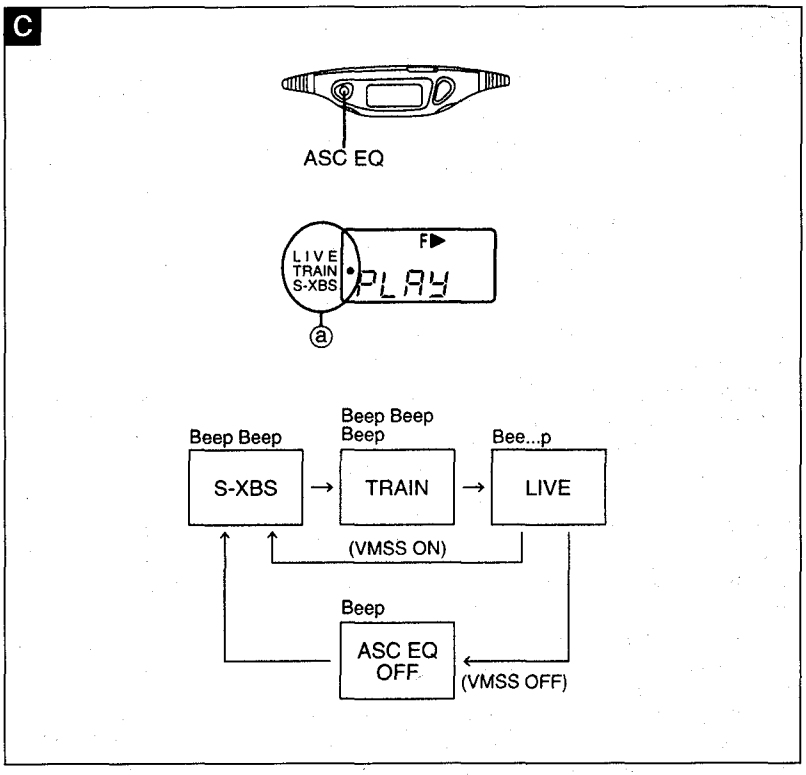
To repeat a current song E

(ONE-REPEAT)
Press and hold ASC EQ on the remote control during play.

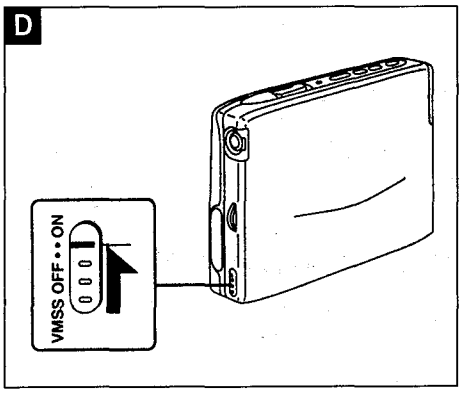
■ To cancel the ONE-REPEAT

Press and hold ASC EQ once more.
ONE-REPEAT is also cancelled when tape operations are switched.

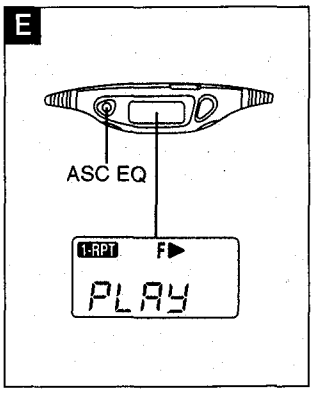
C



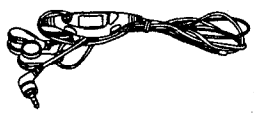
D



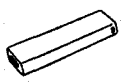
E



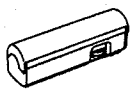
■ ACCESSORIES



Stereo earphones with remote controller ..... 1 pc.
(RFEV126P-KS)

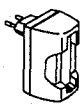


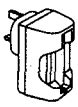
Rechargeable battery ... 1 pc.
(RP-BP62EYS1)



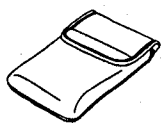
Battery case ..... 1 pc.
(RFA0474-K)

Cord clip..... 1 pc.
(RFA0574-K)

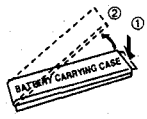




Charger ..... 1 pc.
(RP-BC155EY-0): (E)
(RP-BC155EBYA): (EB)



Carrying bag ..... 1 pc.
(RFC0027-K)



Rechargeable battery carrying case ..... 1 pc.
(RFA0475-Q)

■ PROCEDURE FOR THE REPLACEMENT OF THE MECHANISM BLOCK

• How to replace the mechanism block

The mechanism block is supplied without other parts as a semi-assembly. The head block, motor and belt are supplied separately from the mechanism block.
If the mechanism block is exchanged as a replacement assembly, follow the preparation procedure below.

Preparation procedure

Remove the head block, motor and belt from the mechanism to be replaced and replace those parts to the new mechanism block.
(Refer to the "OPERATION CHECKS AND MAIN COMPONENT REPLACEMENT PROCEDURES".)

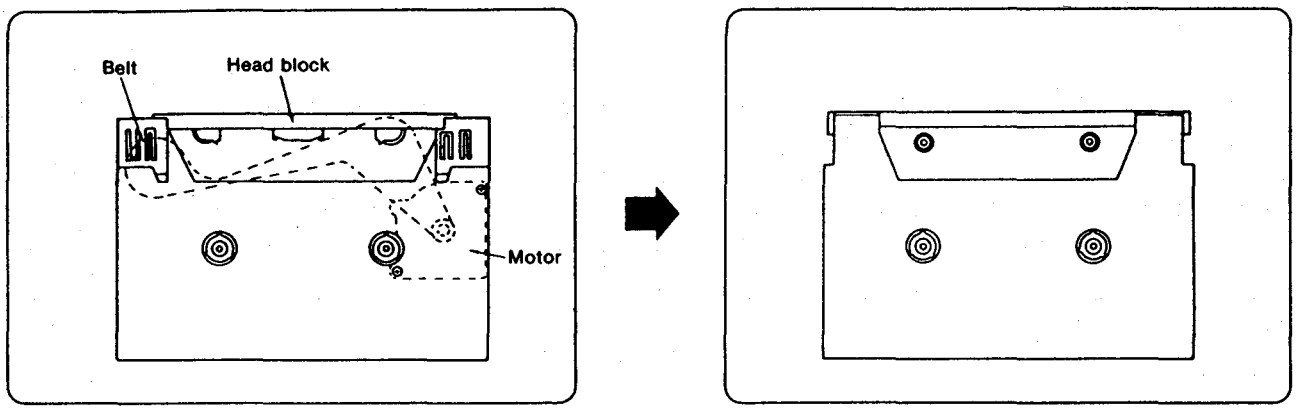


Fig. 1

Fig. 2

Note: The adjustment of the mechanism block is unnecessary after replacement.

• How to replace the head block

The head and pinch roller are supplied together in the head block. The pinch roller is also supplied separately.

Preparation procedure

The head block for replacement is not supplied with a holder as shown in the figure below. Therefore, remove the holder from the block to be repaired and mount it to the new head block. Then, proceed to replace the head block.
(Refer to the "OPERATION CHECKS AND MAIN COMPONENT REPLACEMENT PROCEDURES".)

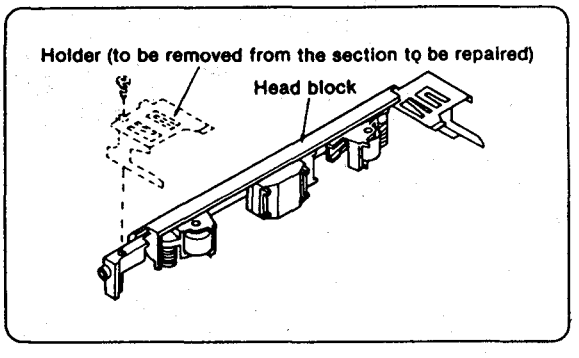


Fig. 3

Note: Head azimuth adjustment is unnecessary.

■ OPERATION CHECKS AND MAIN COMPONENT REPLACEMENT PROCEDURES

NOTE

1. **This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**
2. **For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.**
3. **Illustrated screws are equivalent to actual size.**
4. **[ ] indicates parts No.**

• Contents

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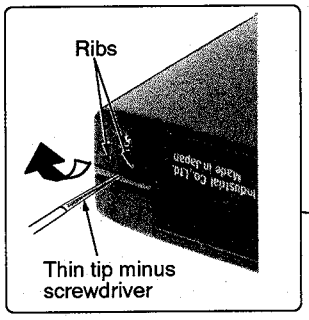
1.Checking for the P.C.B. .... 6,7.
2.Replacement for the motor and belt. .... 8.
3.Replacement for the cassette lid(A) ass'y and cassette lid (B) ass'y .... 8~11.
4.Replacement for the head block ass'y and pinch roller arm. .... 12,13.
5.Replacement for the intermediate ornament(B), intermediate ornament(C) and side ornament. .... 13,14.

1. Checking for the P.C.B.

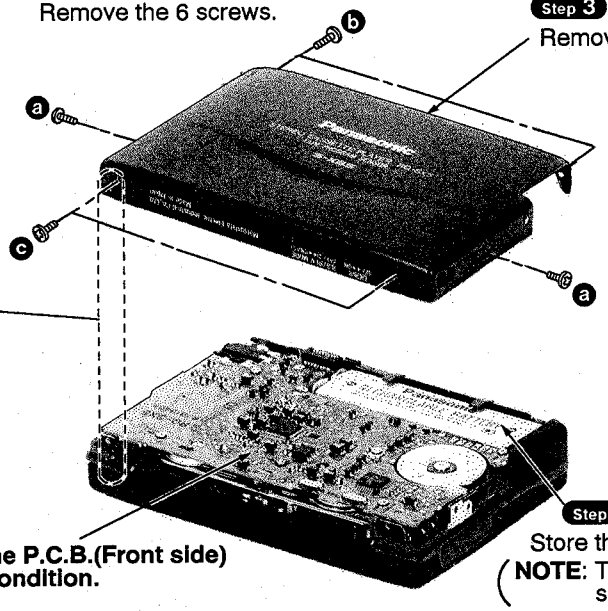
Step 1 Remove the 6 screws.

Step 3 Remove the cabinet ass'y.

Step 2 Remove the 2 ribs.



NOTE
Unless releasing the rib, the rib may be damaged when removing the cabinet ass'y.

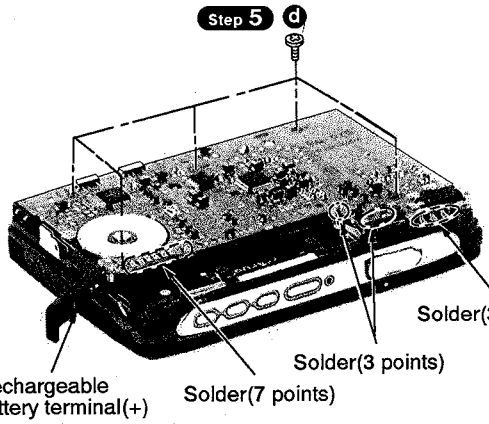


Step 4 Store the rechargeable battery.
(**NOTE**: The rechargeable battery should be recharged fully.)

• **Check the P.C.B.(Front side) in this condition.**

Removal for checking the P.C.B.(Back side)

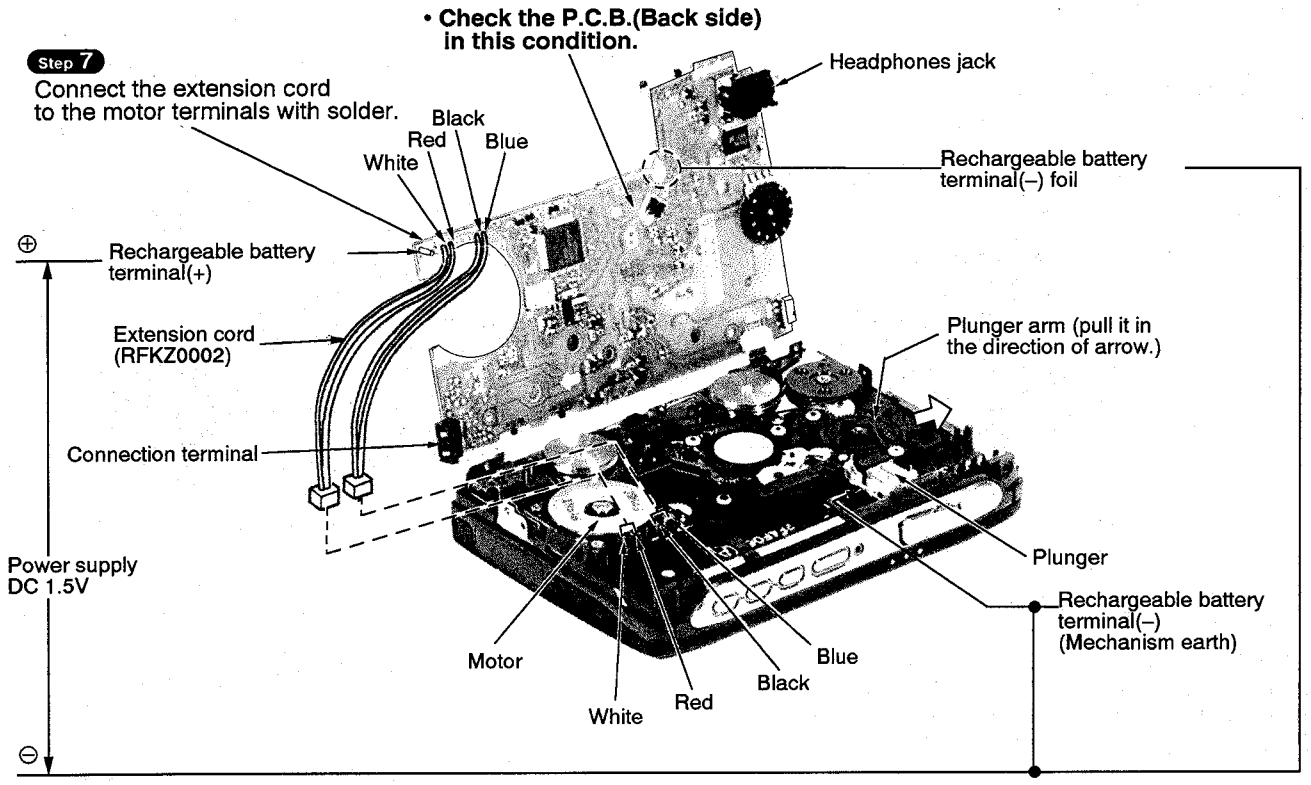
Step 5 d



NOTE
※ When the P.C.B. is removed, the rechargeable battery terminal(+) will also be removed.

Step 6 Unsolder each point.

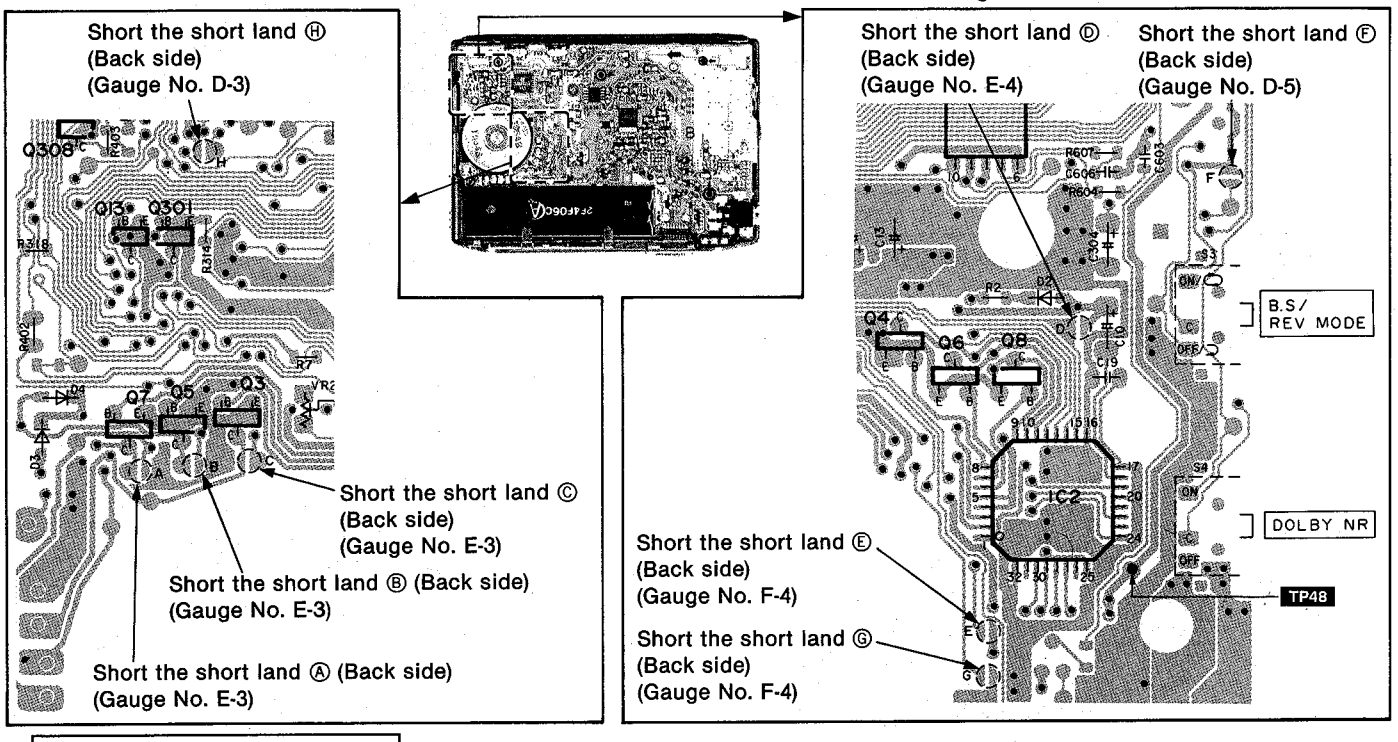
a [RHE5155YA]	b [RHE5169YA]
c [RHQ0027-K]	d [RHE5119ZA]



■ Short Points

• Solder the short land to shrot the circuit.

NOTE This diagram shows a front view of the IC4 mounting surface.


Short the short land Ⓗ (Back side) (Gauge No. D-3)
Short the short land Ⓒ (Back side) (Gauge No. E-3)
Short the short land Ⓑ (Back side) (Gauge No. E-3)
Short the short land Ⓐ (Back side) (Gauge No. E-3)
Short the short land Ⓓ (Back side) (Gauge No. E-4)
Short the short land Ⓕ (Back side) (Gauge No. D-5)
Short the short land Ⓔ (Back side) (Gauge No. F-4)
Short the short land Ⓖ (Back side) (Gauge No. F-4)
B.S/ REV MODE
DOLBY NR
TP48
IC2

Mechanism Mode Setting

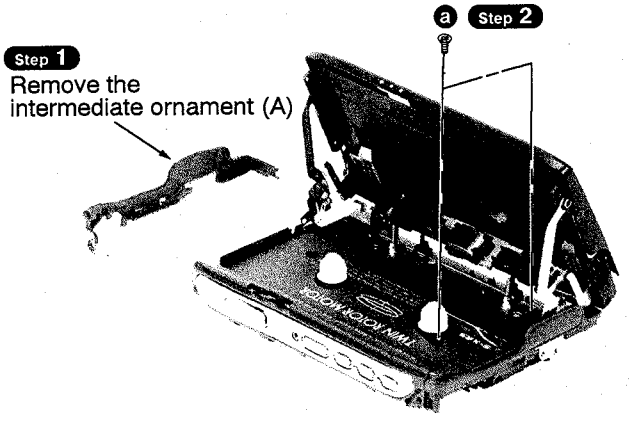
• Manually operate the plunger arm when checking the PLAY/STOP operation.
• Manually pulling the plunger arm once sets the FWD mode; twice, REV ; and, three times, STOP.

NOTE

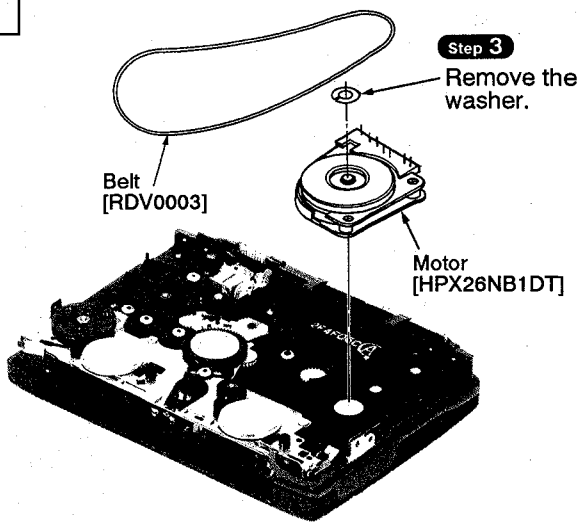
1. Operate the plunger arm manually. Even if the operation buttons pressed, the plunger will not be actuated.
2. Even if the mechanism unit is switched to the FWD mode, the head change – over switch (IC1) will remain in the REV position, so set the REV mode to check the audio.
   Before checking the operation problems and adjustments, be sure to release the hold state. (With the stereo earphones)
3. After checking, unsolder the short land Ⓐ, Ⓑ, Ⓒ, Ⓓ, Ⓔ, Ⓕ, Ⓖ and Ⓗ.

2. Replacement for the motor and belt

• Follow Step 1 ~ Step 3 , Step 5 , Step 6 in item 1 on page 6.



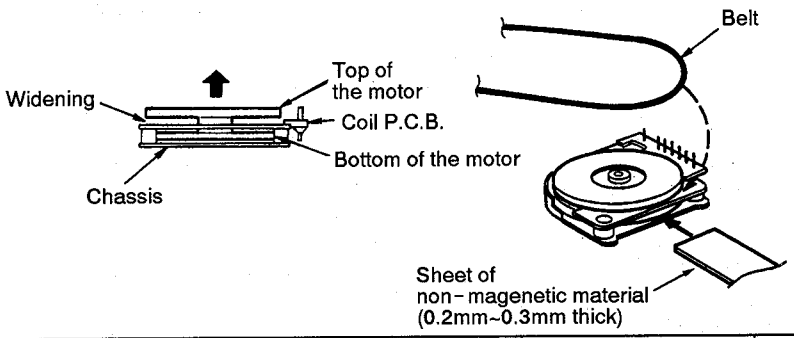
Upset the set

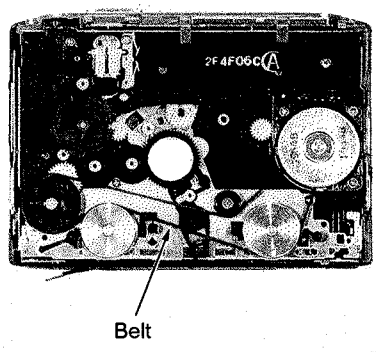


Installing the belt

• When install the belt to motor, push up the motor by insert the non-magnetic material sheet between bottom of the motor and the chassis, and install the belt between top of the motor and the coil P.C.B..

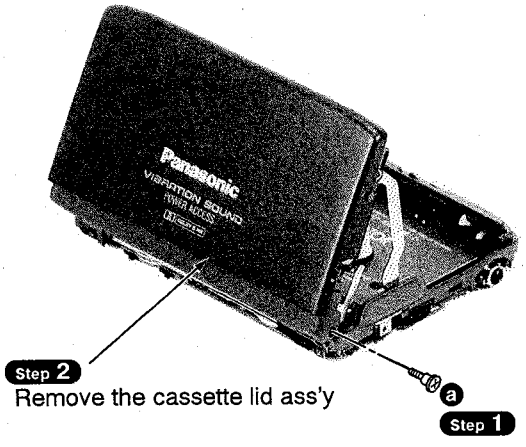
a [XQS14+A18FZ]



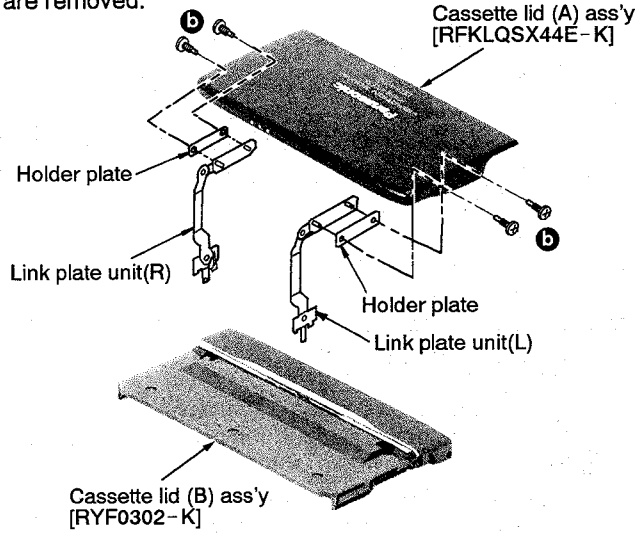


3. Replacement for the cassette lid (A) ass'y and cassette lid (B) ass'y

• Follow Step 1 ~ Step 3 in item 1 on page 6.



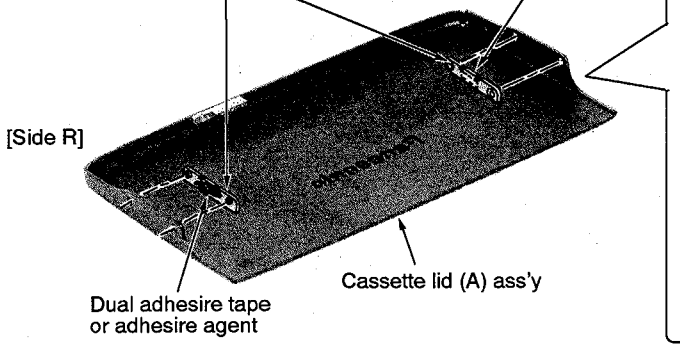
Step 3
When removing the screws, the parts as shown below are removed.

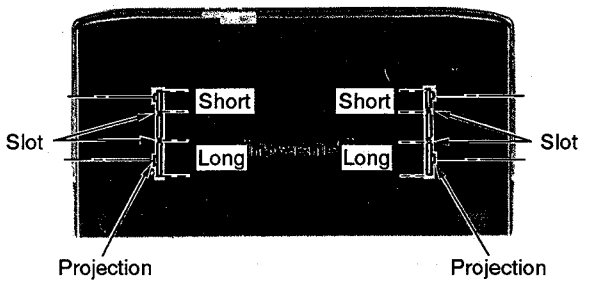


a [RHD14008-K] b [RHQ0035-K]

Assembly procedures for the cassette lid (A) ass'y and cassette lid (B) ass'y after replacement

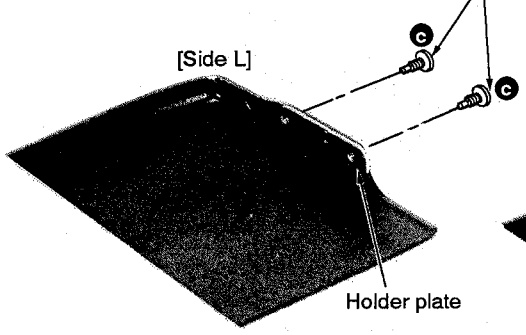
Step 1
Temporarily install the holder plate to cassette lid (A) ass'y.

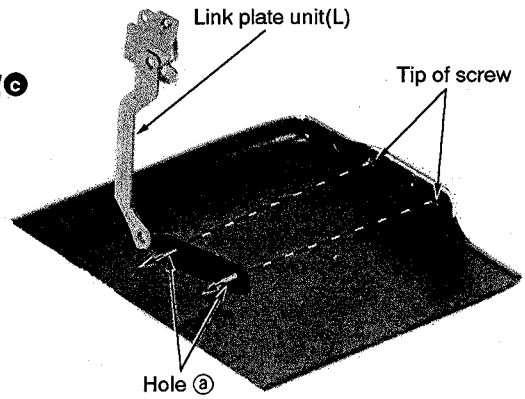




NOTE Take care the plates are in the correct direction when installing. (Refer to above)

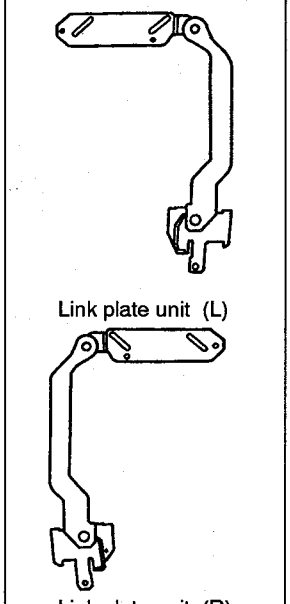
Step 2
Fix with screws.





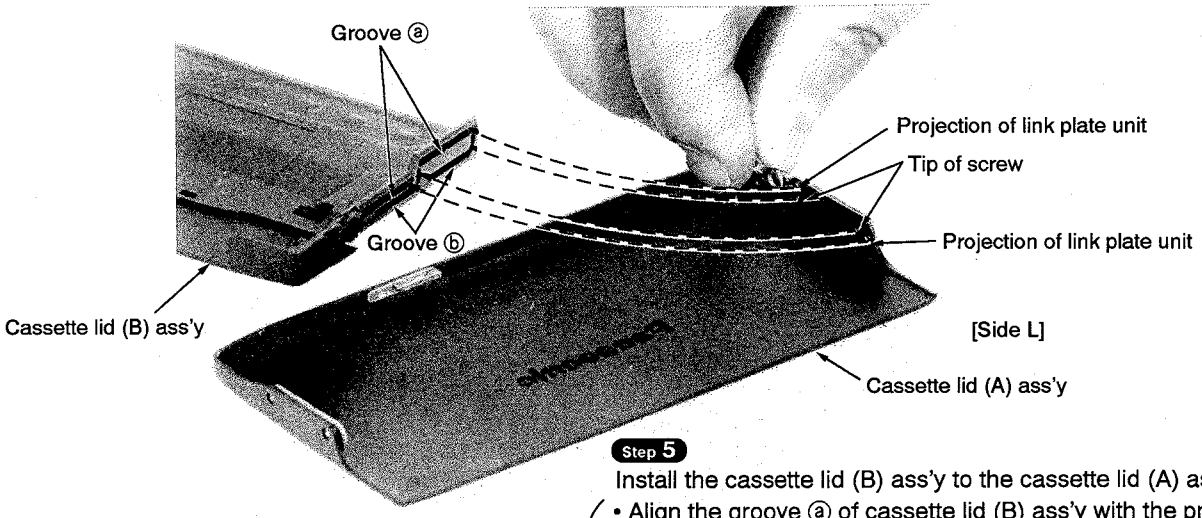
Step 3
Put the screw into the hole ⓐ.

■ Link plate unit (L),(R) shaping

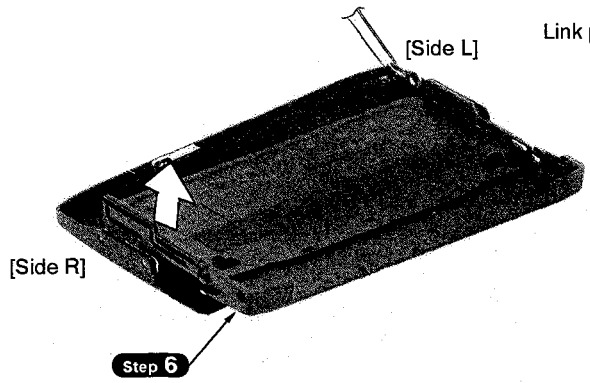


c [RHQ0035-K]

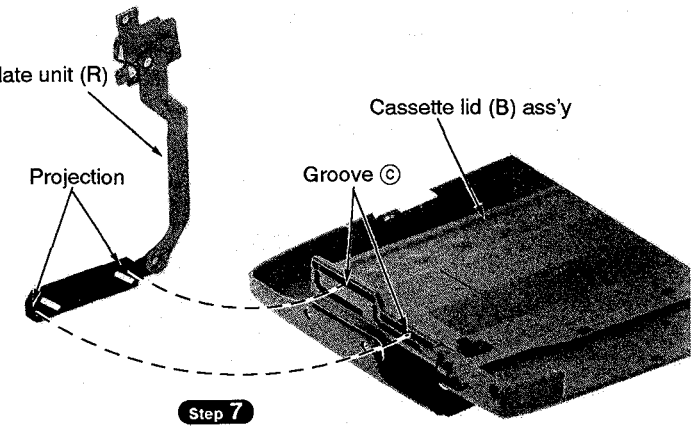
Step 4
Hold the link plate unit (L).



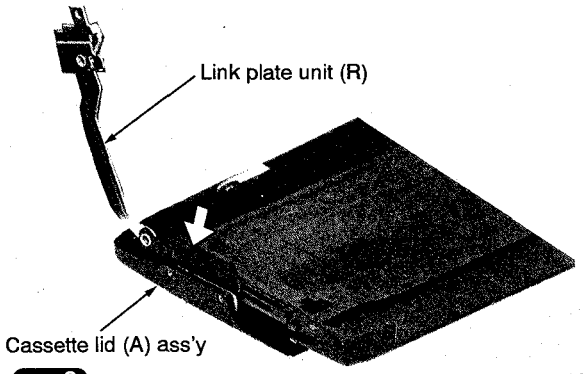
Step 5
Install the cassette lid (B) ass'y to the cassette lid (A) ass'y
- Align the groove ⓐ of cassette lid (B) ass'y with the projection of link plate unit (L).
- Align the groove ⓑ of cassette lid (B) ass'y with the tip of screw.



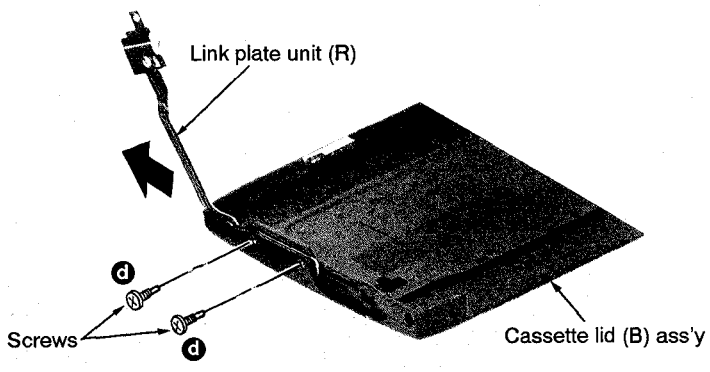
Step 6
Lift the side R of cassette lid (B) ass'y.

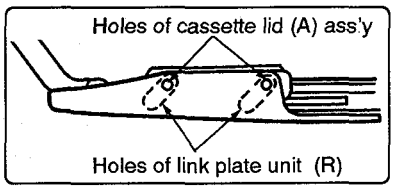


Step 7
Align the projection of link plate unit (R) with the groove ⓒ of cassette lid (B) ass'y.



Step 8
Install the cassette lid (B) ass'y with link plate unit (R) to the cassette lid (A) ass'y.

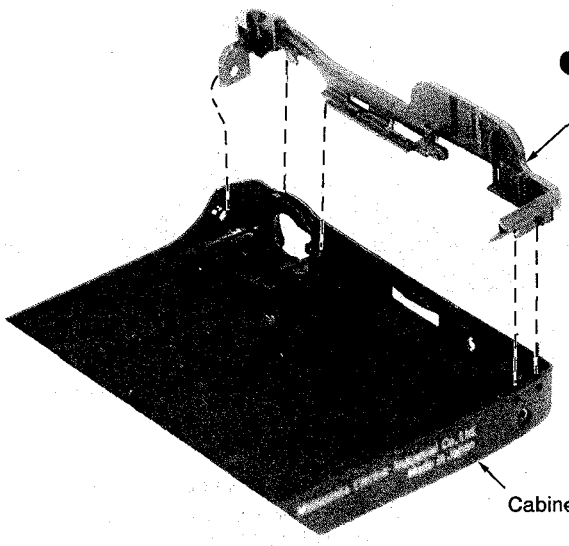




Step 9
Move the link plate unit (R) in the direction of arrow, and then align the holes of cassette lid (A) ass'y with the holes of link plate unit (R) to tighten with screws.

ⓓ
[RHQ0035-K]

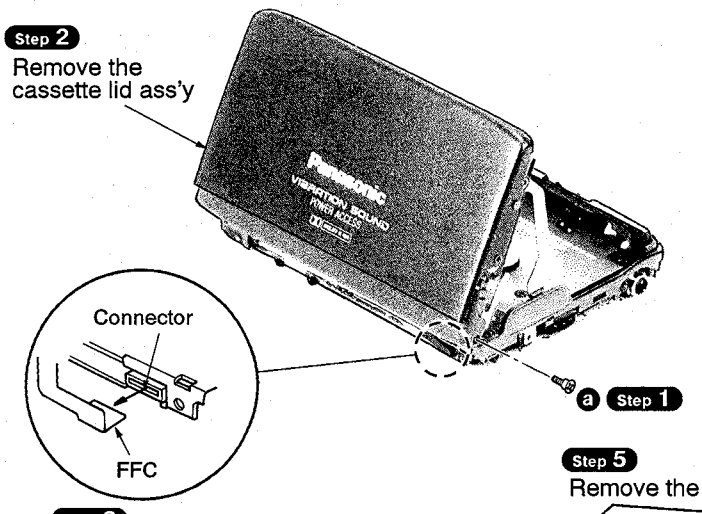
Assembly procedures for the cassette lid ass'y and cabinet ass'y after replacement



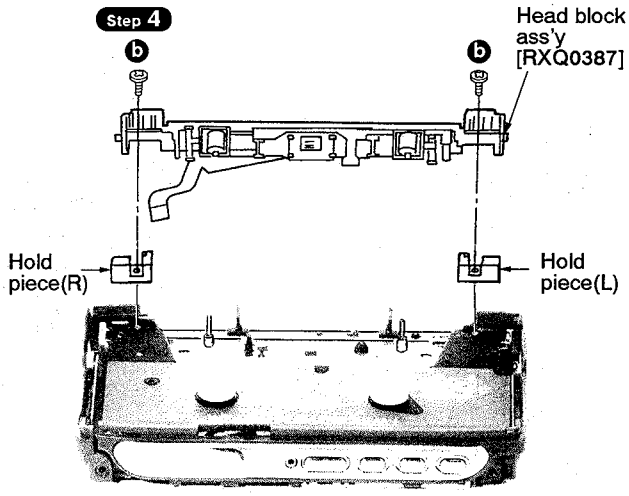
Step 1
Install the intermediate ornament (A).

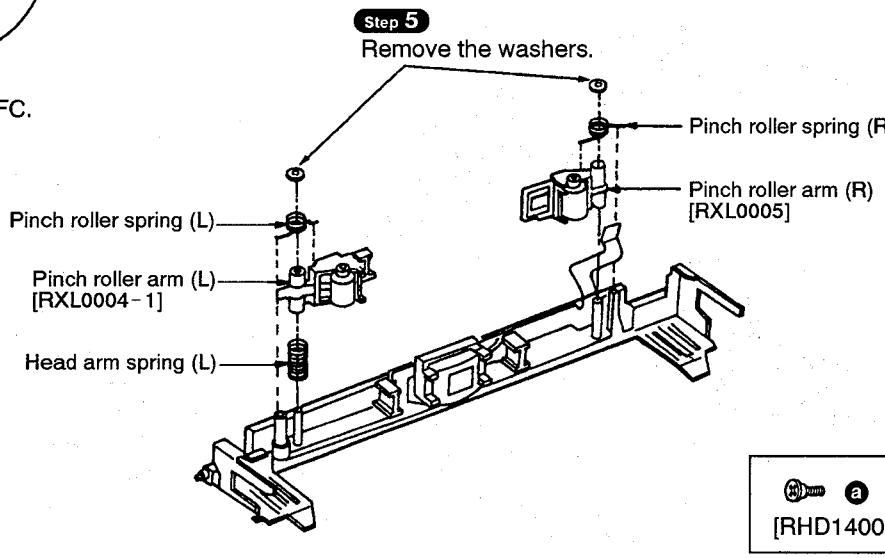
4. Replacement for the head block ass'y and pinch roller arm

• Follow Step 1 ~ Step 3 , Step 5 , Step 6 in item 1 on page 6.



Step 3
Pull out the FFC.

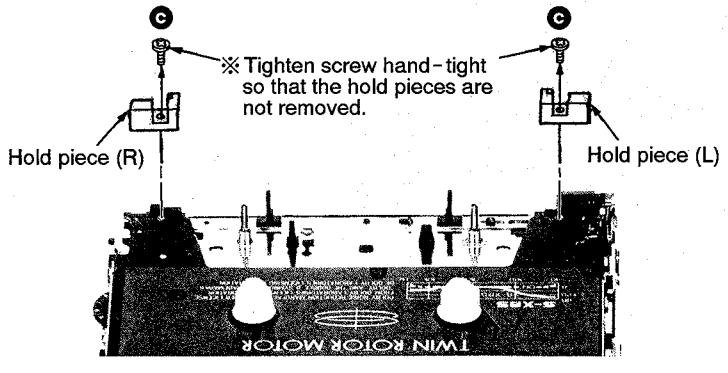




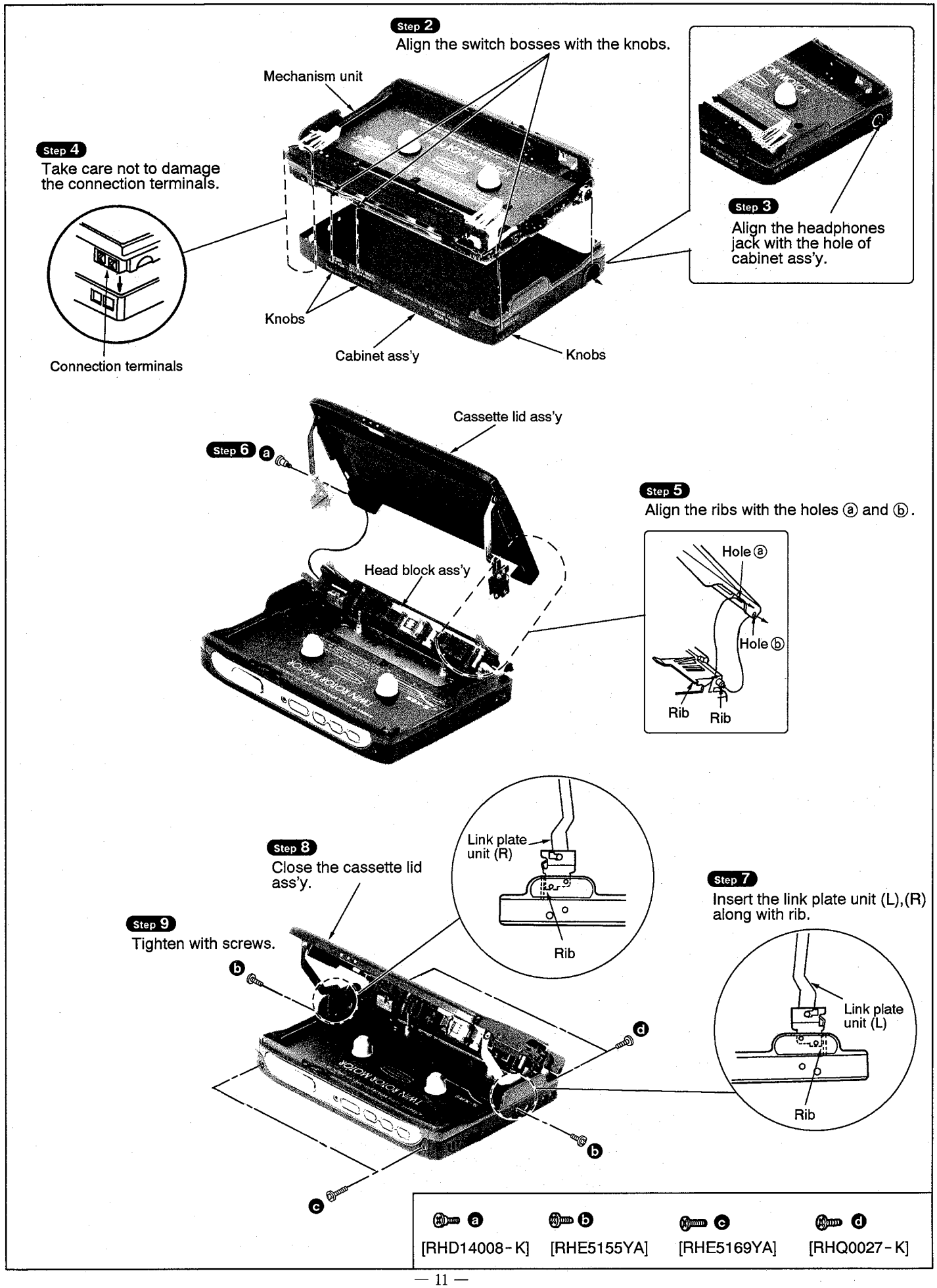
a [RHD14008-K] b [RHD14031]

Assembly procedures for head block ass'y after replacement

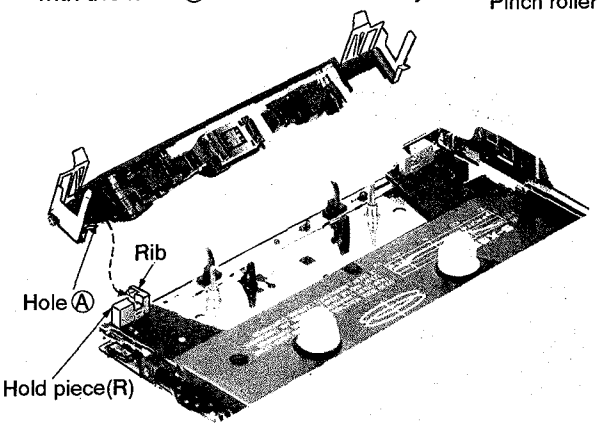
Step 1
Install the hold pieces (L),(R), and then tighten screws.
Then, tighten screw for hold piece hand-tight.

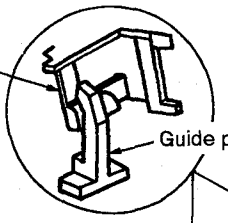


c [RHD14031]

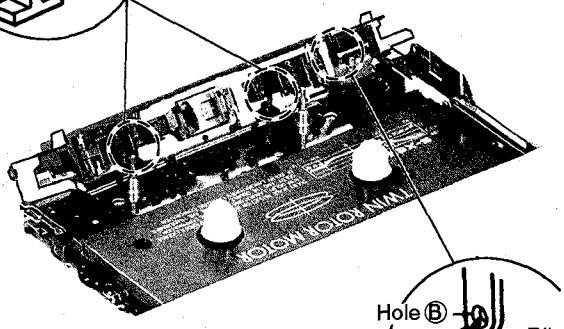

Step 2
Align the switch bosses with the knobs.
Mechanism unit
Step 4
Take care not to damage the connection terminals.
Connection terminals
Knobs
Cabinet ass'y
Knobs
Step 3
Align the headphones jack with the hole of cabinet ass'y.
Cassette lid ass'y
Step 6 a
Head block ass'y
Step 5
Align the ribs with the holes ⓐ and ⓑ.
Hole ⓐ
Hole ⓑ
Rib
Rib
Link plate unit (R)
Rib
Step 8
Close the cassette lid ass'y.
Step 9
Tighten with screws.
b
d
b
c
Step 7
Insert the link plate unit (L),(R) along with rib.
Link plate unit (L)
Rib
a [RHD14008-K]
b [RHE5155YA]
c [RHE5169YA]
d [RHQ0027-K]

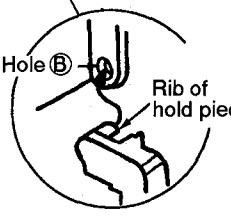
Step 2
Align the rib of hold piece (R) with the hole Ⓐ of head block ass'y.



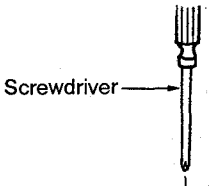


NOTE Take care that the guide piece strikes the pinch roller arm. Refer to the left.

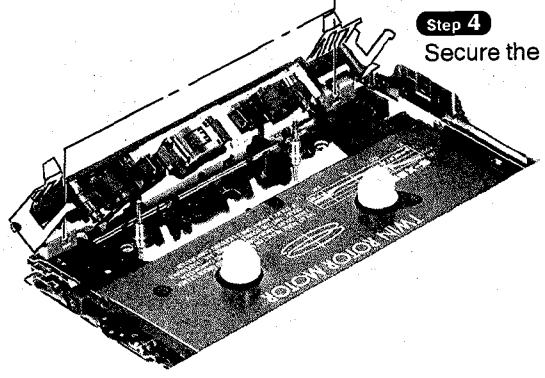




Step 3
Align the rib of hold piece (L) with the hole Ⓑ of head block.



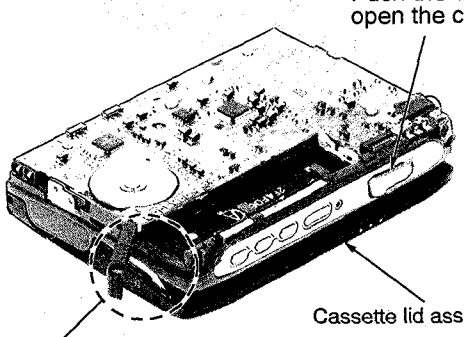
Step 4
Secure the screws.



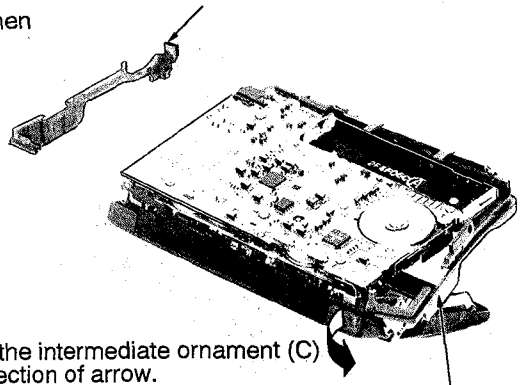
5. Replacement for the intermediate ornament (B), intermediate ornament (C) and side ornament

• Follow **Step 1** ~ **Step 3** in item 1 on page 6.

Step 2
Push the open lever, and then open the cassette lid ass'y.

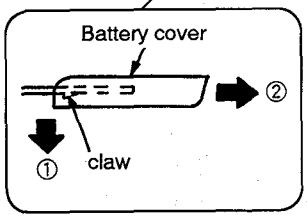


Step 3
Remove the intermediate ornament (A).



Step 4
Remove the intermediate ornament (C) in the direction of arrow.

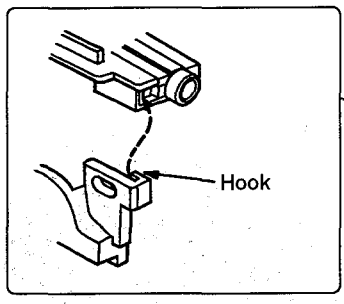
Intermediate ornament (C)

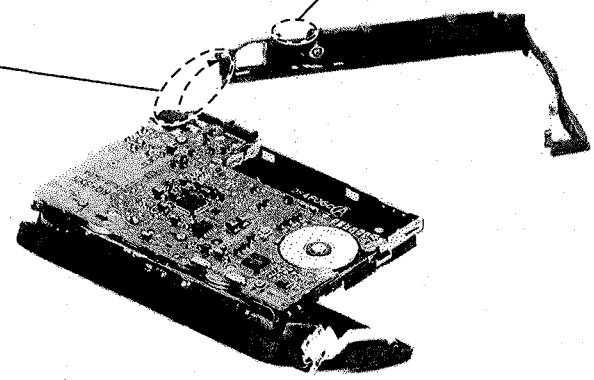


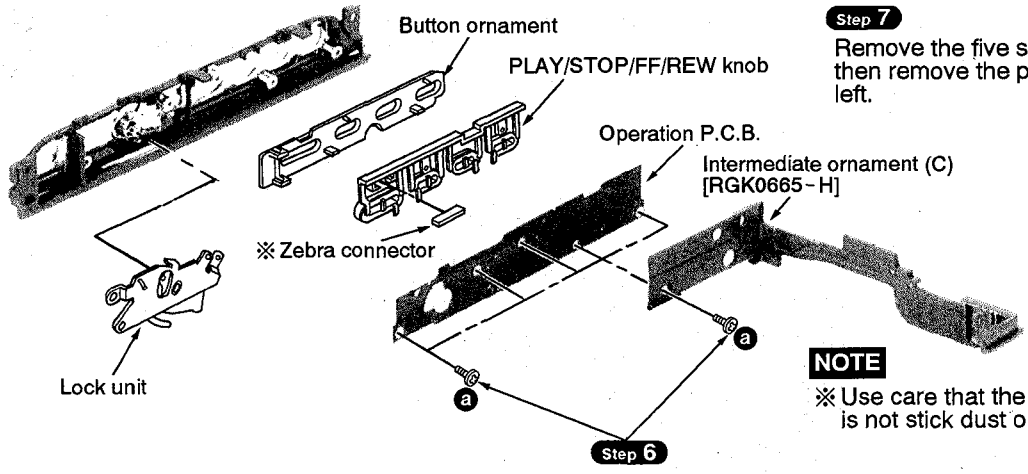
Step 1
Release the claw in the direction of arrow ①, and remove the battery cover in the direction of arrow ②.

NOTE
• Use care that the contact is not stick dust or grease.

Step 5
Release the hook.



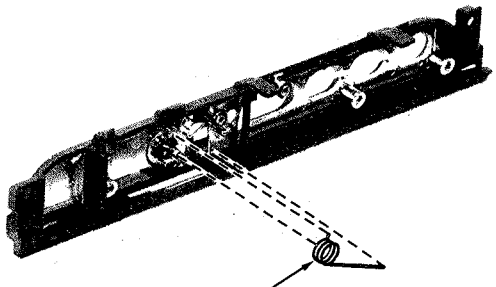




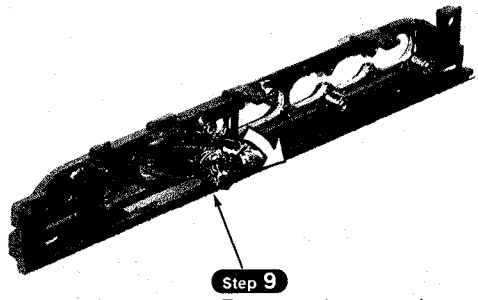
Step 6

Step 7
Remove the five screws, and then remove the parts as shown left.

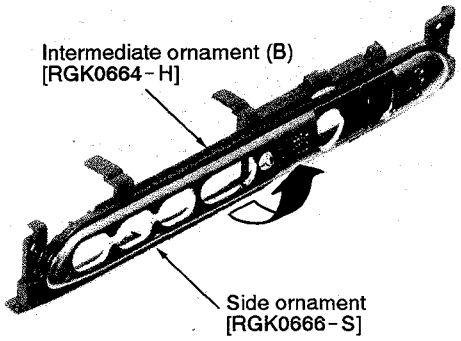
NOTE
※Use care that the zebra connector is not stick dust or grease.



Step 8
Remove the auto return spring.



Step 9
Remove the open lever.



a
[RHE5119YA]

■ MEASUREMENTS AND ADJUSTMENTS

● ADJUSTMENT INSTRUCTIONS

READ CAREFULLY BEFORE ATTEMPTING ADJUSTMENTS	
1. Set volume control to maximum. 2. Set Dolby NR Switch to OFF.	3. Release the hold state. 4. Set power source voltage to 1.5V DC.

• CONTROL POSITIONS AND EQUIPMENT USED

1. Frequency counter

● TAPE SECTION

ITEM	TEST TAPE	MEASUREMENT POINT	ADJUSTMENT POINT	PROCEDURE
Tape speed adjustment	QZZCWAT (3kHz, −10dB)	Connect the frequency counter to Headphones jack (16Ω) (Refer to Fig. 1)	VR2 (Refer to Fig. 2)	Playback the central part of the tape and adjust VR2 so that the tape speed is as follows. Forward: 3000±20Hz Reverse: 2940~3050Hz Make sure that the frequency range in within ±60Hz for between "Forward" and "Reverse" mode.

Note: The playback head is supplied on the head arm assembly. (See the Mechanism parts location on page 26.)
The assembly requires no adjustment.

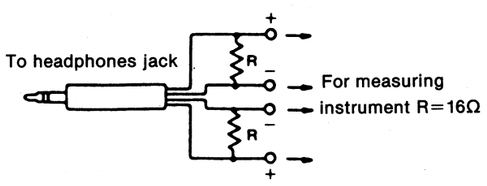


Fig. 1

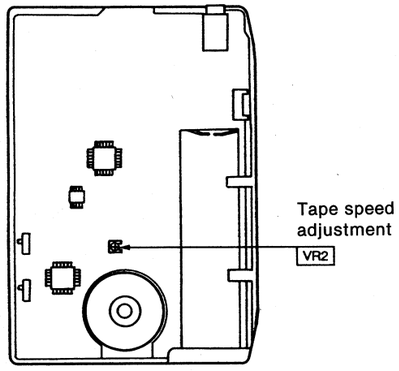
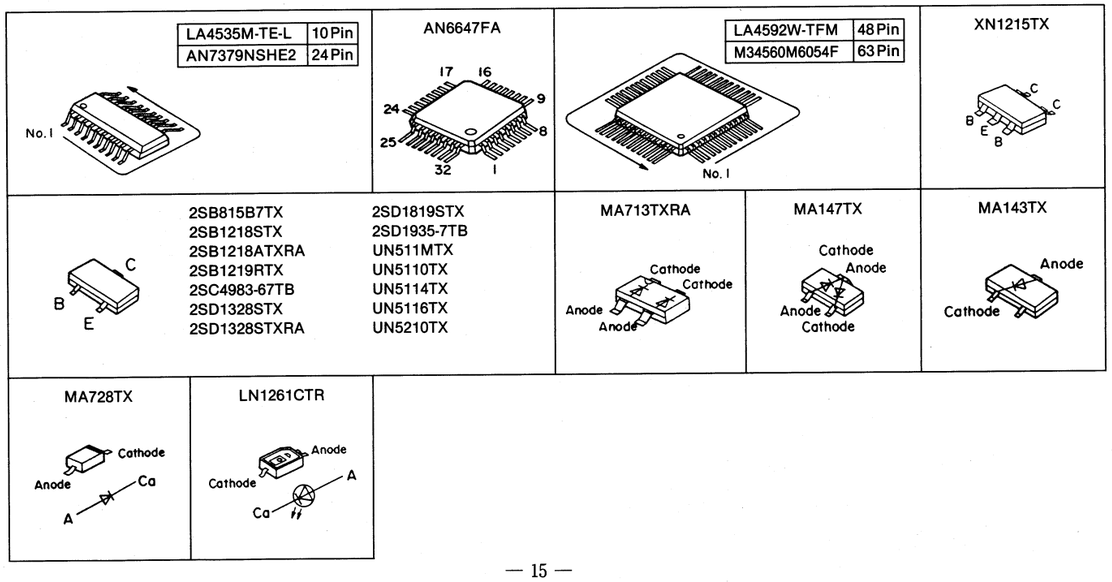


Fig. 2

• Terminal guide of IC's, transistors and diodes



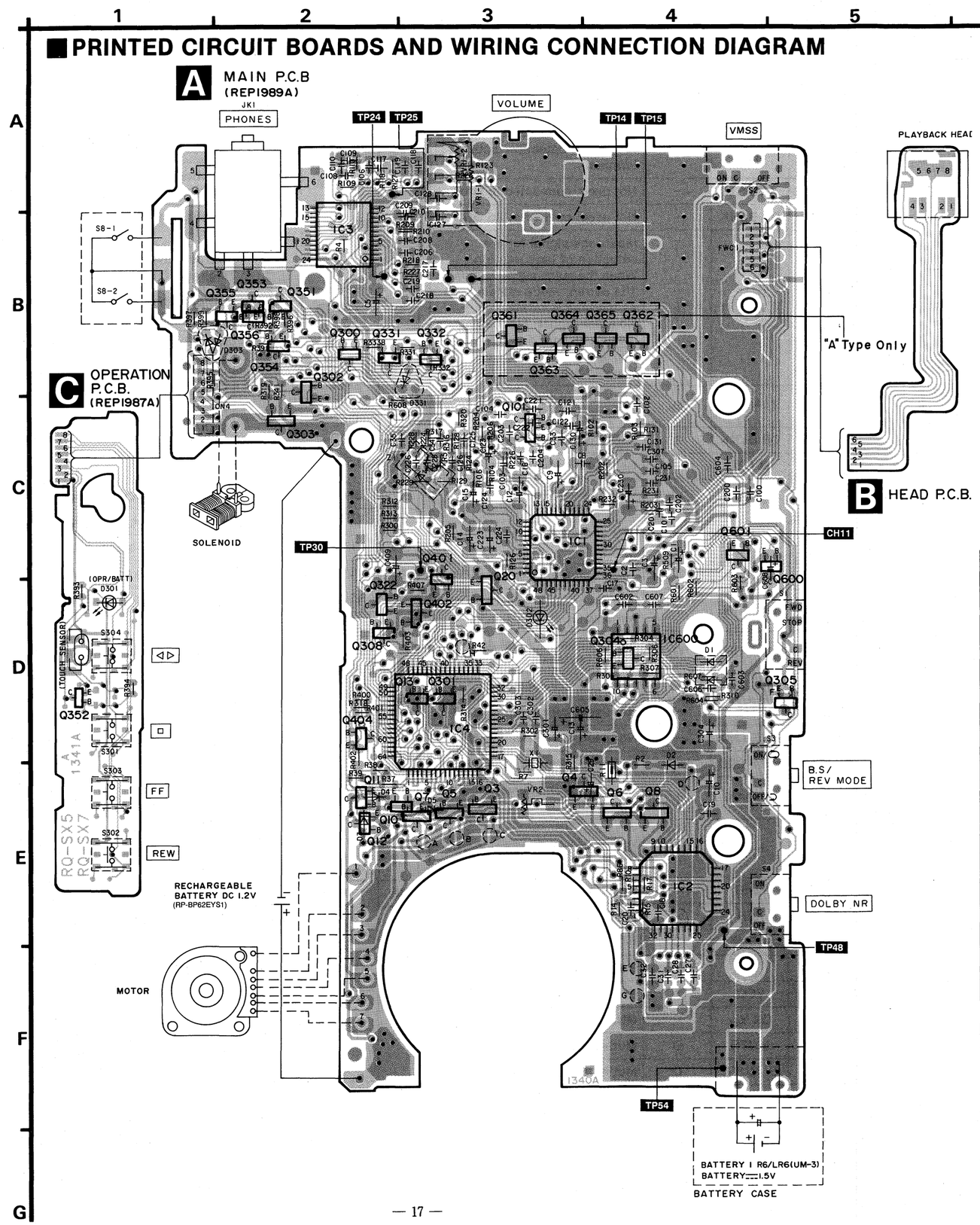
■ TERMINAL FUNCTION OF IC

• IC4 (M34560M6054F): Mechanism control

Pin No.	Mark	I/O Division	Function
1	REV	I	Play mode detection input terminal
2	STBY L	—	Not used, connected to GND
3	DD BLNK	—	Not used, connected to GND
4	T. PLS IN	I	Inputs the signal for the detection of tape rotation. When the pulse signal is inoput: The current mode remains set as the tape is rotating. No pulse signal: Stops or starts reverse playback as the tape has stopped rotating (ie, reached the end).
5	T. PLS C	O	Tape turn control output terminal
6	OP BLNK	I	LED drive signal input
7	IM LED	—	Not used, connected to GND
8	BEEP	O	Confirmation beep output of remote control operation
9	TPS IN	I	TPS control signal input terminal
10	TEST IN	I	Test signal input terminal
11	DATA IN	I	Remote control serial data input terminal
12	DATA OUT	O	Remote control serial data output terminal
13	XBS LED	—	Not used, connected to GND
14	TRAIN LED	—	Not used, connected to GND
15	LIVE LED	—	Not used, connected to GND
16	H OF LED	—	Not used, connected to GND
17	B. MAX	I	Virtual motion sound (VMSS) detect input terminal
18 ∫ 20	N. C	—	Not used, connected to GND
21	REST	I	Reset signal input terminal
22	X IN	I	Crystal oscillator terminal (F=32kHz)
23	X OUT	O	
24	V_{SS}	—	GND terminal
25	VCC	I	Power supply terminal
26	CN V_{SS}	—	GND terminal
27	MUTE	O	Muting signal output terminal
28	B. MUTE	O	Muting signal output terminal
29 ∫ 37	N. C	—	Not used, open

Pin No.	Mark	I/O Division	Function
38	SX5/7	—	Not used, connected to GND
39	PL-F SW	I	Mechanism (FWD) detect input terminal
40	PL-R SW	I	Mechanism (REV) detect input terminal
41	POWER	O	Outputs the power switching signal (MOTOR ON)
42	MOTOR	O	Outputs the motor drive signal (MOTOR ON)
43	M. CCW	O	Outputs the reversing motor drive control signal
44	SPEED	O	Speed up signal output terminal
45	P-SOL	O	Outputs the solenoid drive signal
46	LED R	O	Outputs the heads switching signal (REV)
47	BREAK	O	Motor brake signal output
48	$\overline{\text{SPEED}}$	$\overline{\text{O}}$	LED control signal output
49	XBS OFF	O	S-XBS control signal output
50	LIVE ON	O	ASC EQ (LIVE) control signal
51	ASC ON	O	ASC EQ ON control signal
52	B. POW	O	Power supply control signal output
53 • 54	VOL. 1 • VOL. 2	—	Not used, connected to GND
55 • 56	VOL. 3L • VOL. 3R	—	Not used, connected to GND
57	V_{SS}	—	GND terminal
58	STOP	I	Key switch detect terminal (STOP)
59	PLAY	I	Key switch detect terminal (PLAY)
60	FF	I	Key switch detect terminal (FF)
61	REW	I	Key switch detect terminal (REW)
62	KEY ENT	I	Inputs the hold (touch sensor ON/OFF) detect
63	OPEN	I	Inputs the signal that detects whether the cassette tape is inserted. "L" ON (CLOSE); the tape is inserted. "H" OFF (OPEN); the tape is not inserted.
64	REN FIXL	—	Not used, connected to GND

■ PRINTED CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM



• CHECK POINT OF SIGNAL

CHECK ITEM		TEST POINT
HEAD → PRE OUTPUT	Lch	TP15
	Rch	TP14
	GND	CH11
PRE OUTPUT → DOLBY NR OUTPUT	Lch	TP25
	Rch	TP24
	GND	CH11
DOLBY NR OUTPUT → VR INPUT	Lch	VR TERMINAL
	Rch	VR TERMINAL
	COM	VR TERMINAL
VR INPUT → VR OUTPUT	Lch	VR TERMINAL
	Rch	VR TERMINAL
	COM	VR TERMINAL
POWER AMP OUTPUT → HEADPHONE OUTPUT	Lch	HP TERMINAL
	Rch	HP TERMIANL
	COM	HP TERMINAL
DC-DC CONVERTER (BOOSTER)	2.4V OUTPUT	TP48
	GND	TP54
PHOTO COUPLER (END)	PULSE OUTPUT	TP30

Notes:

- In this printed circuit board diagram, the parts and foil patterns on the board facing toward you are printed in black.
  The opposite side is printed in blue.
- The " • " mark denotes the connection points of double-faced foil patterns (through holes) on both side of the printed circuit board.
- This printed circuit board diagram may be modified at any time with the development of new technology.

■ SCHEMATIC DIAGRAM

(See parts list on pages 22~24.)

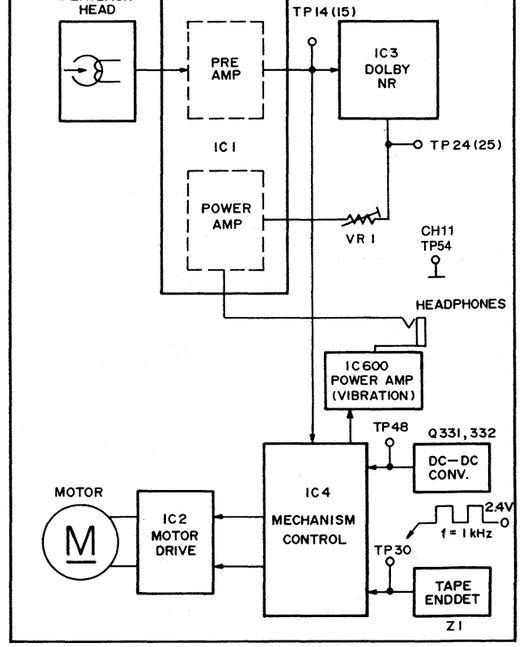
(This schematic diagram may be modified at any time with development of new technology.)

Notes:

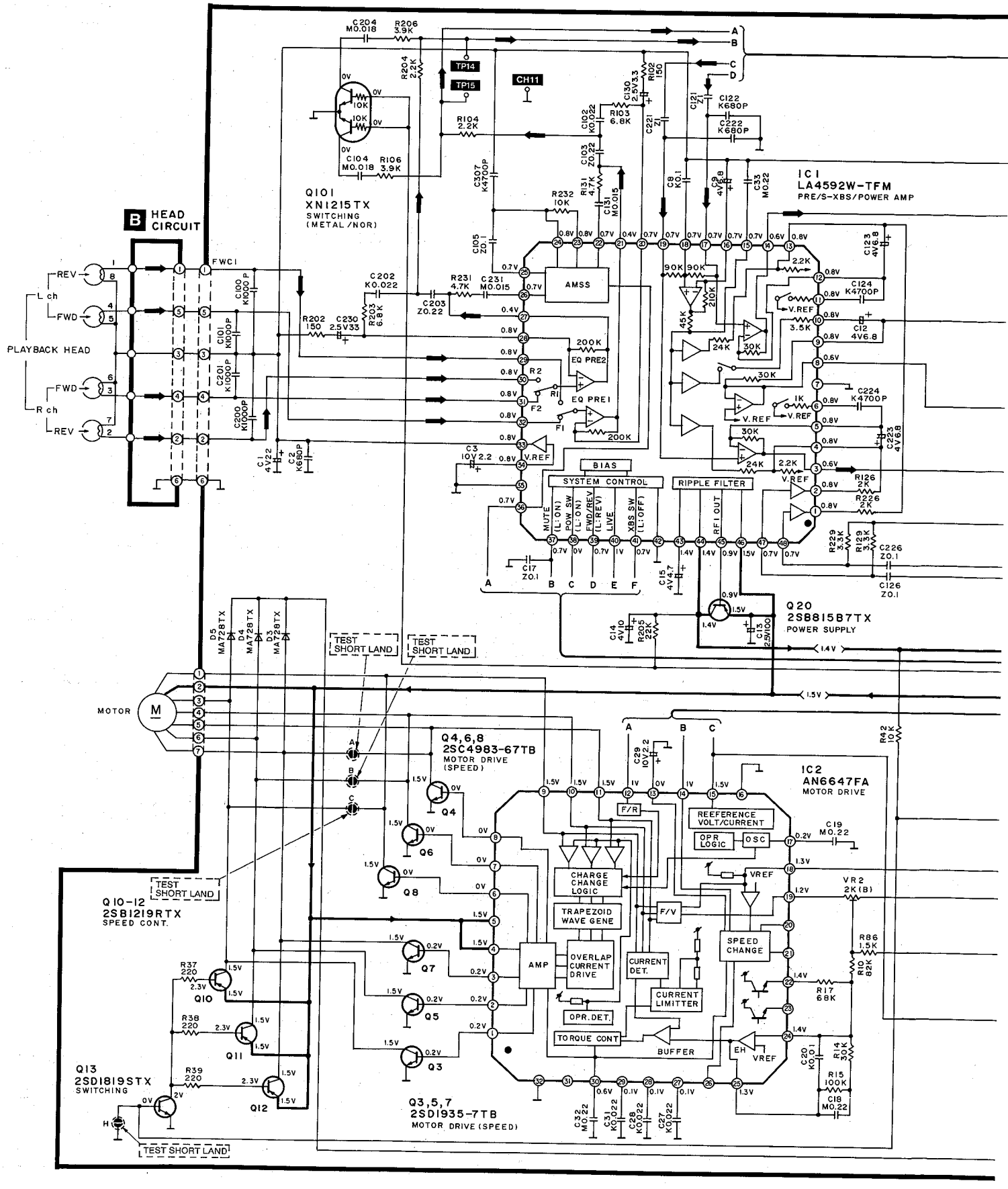
- **S1** : FWD/REV switch in "FWD" position.
- **S2** : VMSS switch in "OFF" position.
- **S3** : B.S/Reverse mode switch in "OFF" position.
- **S4** : DC NR switch in "OFF" position.
- **S8-1** : Tape detector (OPEN/CLOSE) switch in "OPEN" position.
- **S8-2** : Tape selector (METAL/NORMAL) switch in "OFF (METAL)" position.
- **S301** : (■) switch.
- **S302** : REW switch.
- **S303** : FF switch.
- **S304** : (◀▶) switch.
- **VR1** : Volume adjustment.
- **VR2** : Tape speed adjustment.
- DC voltage measurements are taken with electronics voltmeter from negative terminal of battery.
  No mark... Playback.

  Volume VR [MAX...100mA / MIN....120mA]
- Signal line
  ▬▶ : +B line, ▬▶ : Playback signal.

• BLOCK DIAGRAM

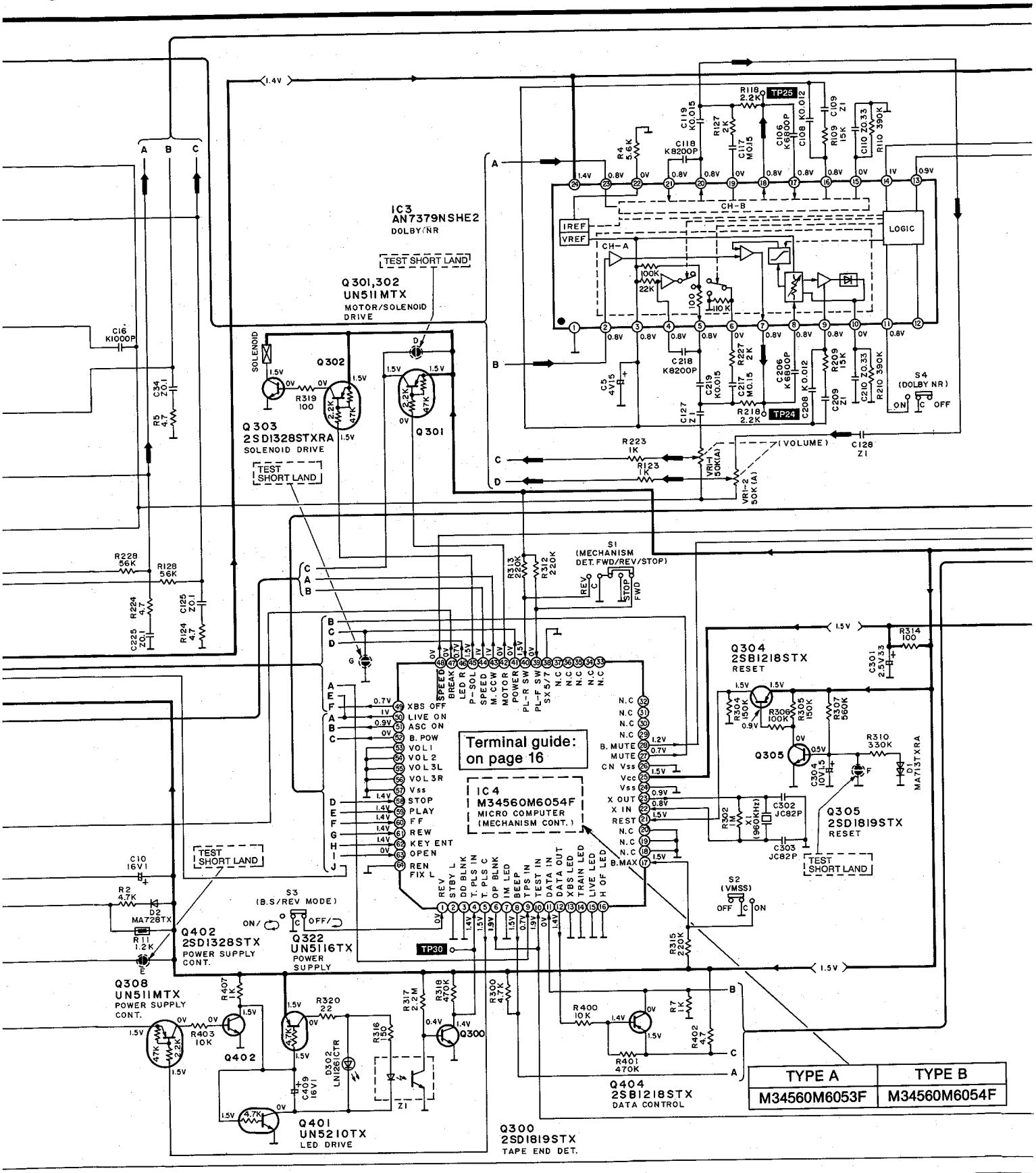


A MAIN CIRCUIT (P.C. Board: on pages 17, 18)



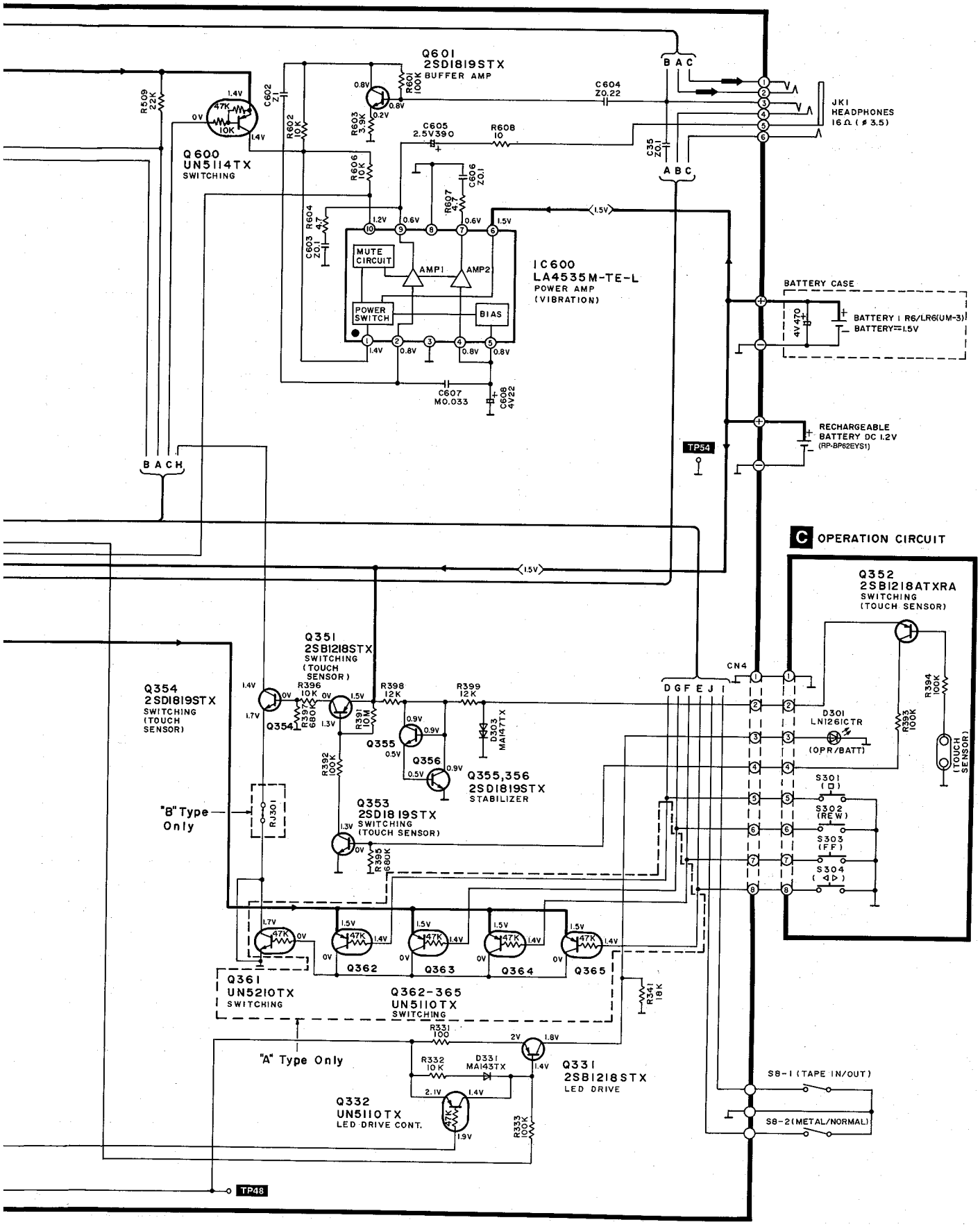
- There are two types of the mechanical control IC4 for this unit, A and B.
- Transistors Q361 through Q365 are not used with the B type IC. (Refer to the circuit drawing in doted lines on page 21.)

	IC4	Transistor used
Type A	M34560M6053F	Q361~Q365 Yes
Type B	M34560M6054F	Q361~Q365 No



TYPE A	TYPE B
M34560M6053F	M34560M6054F

- M34560M6054F is supplied for replacement.
  When replacing an IC, always use type B, regardless of the current IC type. Even if the current IC is of type A, it is not necessary to replace transistors Q361 through Q365.



■ REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)	
IC1	LA4592W-TFM	PRE/S-XBS/POWRE AMP	
IC2	AN6647FA	MOTOR DRIVE	
IC3	AN7379NSHE2	DOLBY B NR	
IC4	M34560M6054F	MECHANISM CONTROL	
IC600	LA4535M-TE-L	POWER AMP	
		TRANSISTOR(S)	
Q3	2SD1935-7TB	TRANSISTOR	
Q4	2SC4983-67TB	TRANSISTOR	
Q5	2SD1935-7TB	TRANSISTOR	
Q6	2SC4983-67TB	TRANSISTOR	
Q7	2SD1935-7TB	TRANSISTOR	
Q8	2SC4983-67TB	TRANSISTOR	
Q10-12	2SB1219RTX	TRANSISTOR	
Q13	2SD1819STX	TRANSISTOR	
Q20	2SB815B7TX	TRANSISTOR	
Q101	XN1215TX	TRANSISTOR	
Q300	2SD1819STX	TRANSISTOR	
Q301, 302	UN511MTX	TRANSISTOR	
Q303	2SD1328STXRA	TRANSISTOR	
Q304	2SB1218STX	TRANSISTOR	
Q305	2SD1819STX	TRANSISTOR	
Q308	UN511MTX	TRANSISTOR	
Q322	UN5116TX	TRANSISTOR	
Q331	2SB1218STX	TRANSISTOR	
Q332	UN5110TX	TRANSISTOR	
Q351	2SB1218STX	TRANSISTOR	
Q352	2SB1218ATXRA	TRANSISTOR	
Q353-356	2SD1819STX	TRANSISTOR	
Q361	UN5210TX	TRANSISTOR	
Q362-365	UN5110TX	TRANSISTOR	
Q401	UN5210TX	TRANSISTOR	
Q402	2SD1328STX	TRANSISTOR	
Q404	2SB1218STX	TRANSISTOR	
Q600	UN5114TX	TRANSISTOR	
Q601	2SD1819STX	TRANSISTOR	
		DIODE(S)	
D1	MA713TXRA	DIODE	
D2-5	MA728TX	DIODE	
D301, 302	LN1261CTR	L. E. D.	
D303	MA147TX	DIODE	
D331	MA143TX	DIODE	
		VARIABLE RESISTOR(S)	
VR1	EVUTOVA05A54	VOLUME CONTROL	
VR2	EVM1YSX50B23	TAPE SPEED ADJUSTMENT	
		PHOTO COUPLER(S)	
Z1	GP2S27T6	PHOTO COUPLER	
		OSCILLATOR(S)	
X1	RSXZ960KF01T	OSCILLATOR(960KHz)	
		SWITCH(ES)	
S1	RSS2A002-A	MECH. DET(FWD/REV)	
S2	RSS2A010-A	VMSS ON/OFF	
S3	RSS2A010-A	B. S/REV MODE	
S4	RSS2A010-A	DOLBY NR	
S8	RSH1B010-U1	LEAF(OPEN/CLOSE, TAPE)	
S301	EVQPLMA15	STOP	
S302	EVQPLMA15	REW	
S303	EVQPLMA15	FF	
S304	EVQPLMA15	PLAY	
		CONNECTOR(S)	
CN4	RJR0127T	CONNECTOR(8P)	
FWC1	RJS2A1606T	FFC CONNECTOR(6P)	
		JACK(S)	
JK1	RJJ36T01-2C	HEADPHONES	

■ RESISTORS AND CAPACITORS

Notes : * Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
* Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM)

Ref. No.	Part No.	Values & Remarks
		RESISTORS
R2	ERJ3GEYJ472V	1/16W 4.7K
R4	ERJ3GEYJ562V	1/16W 5.6K
R5	ERJ3GEYJ4R7V	1/16W 4.7
R7	ERJ3GEYJ102V	1/16W 1K
R10	ERJ3GEYJ823V	1/16W 82K
R11	RRSL41J122U	1/8W 1.2K
R14	ERJ3GEYJ303V	1/16W 30K
R15	ERJ3GEYJ104V	1/16W 100K
R17	ERJ3GEYJ683V	1/16W 68K
R37-39	ERJ3GEYJ221V	1/16W 220
R42	ERJ3GEYJ103V	1/16W 10K
R86	ERJ3GEYJ152V	1/16W 1.5K
R102	ERJ3GEYJ151V	1/16W 150
R103	ERJ3GEYJ682V	1/16W 6.8K
R104	ERJ3GEYJ222V	1/16W 2.2K
R106	ERJ3GEYJ392V	1/16W 3.9K
R109	ERJ3GEYJ153V	1/16W 15K
R110	ERJ3GEYJ394V	1/16W 390K
R118	ERJ3GEYJ222V	1/16W 2.2K
R123	ERJ3GEYJ102V	1/16W 1K
R124	ERJ3GEYJ4R7V	1/16W 4.7
R126, 127	ERJ3GEYJ202V	1/16W 2K
R128	ERJ3GEYJ563V	1/16W 56K
R129	ERJ3GEYJ332V	1/16W 3.3K
R131	ERJ3GEYJ472V	1/16W 4.7K
R202	ERJ3GEYJ151V	1/16W 150
R203	ERJ3GEYJ682V	1/16W 6.8K
R204	ERJ3GEYJ222V	1/16W 2.2K
R205	ERJ3GEYJ223V	1/16W 22K
R206	ERJ3GEYJ392V	1/16W 3.9K
R209	ERJ3GEYJ153V	1/16W 15K
R210	ERJ3GEYJ394V	1/16W 390K
R218	ERJ3GEYJ222V	1/16W 2.2K
R223	ERJ3GEYJ102V	1/16W 1K
R224	ERJ3GEYJ4R7V	1/16W 4.7
R226, 227	ERJ3GEYJ202V	1/16W 2K
R228	ERJ3GEYJ563V	1/16W 56K
R229	ERJ3GEYJ332V	1/16W 3.3K
R231	ERJ3GEYJ472V	1/16W 4.7K
R232	ERJ3GEYJ103V	1/16W 10K
R300	ERJ3GEYJ472V	1/16W 4.7K
R302	ERJ3GEYJ105V	1/16W 1M
R304, 305	ERJ3GEYJ154V	1/16W 150K
R306	ERJ3GEYJ104V	1/16W 100K
R307	ERJ6GEYF564V	1/10W 560K
R310	ERJ3GEYD334V	1/16W 330K
R312, 313	ERJ3GEYJ224V	1/16W 220K
R314	ERJ3GEYJ101V	1/16W 100
R315	ERJ3GEYJ224V	1/16W 220K
R316	ERJ3GEYJ151V	1/16W 150
R317	ERJ3GEYJ225V	1/16W 2.2M
R318	ERJ3GEYJ474V	1/16W 470K
R319	ERJ3GEYJ101V	1/16W 100
R320	ERJ3GEYJ220V	1/16W 22
R331	ERJ3GEYJ101V	1/16W 100
R332	ERJ3GEYJ103V	1/16W 10K
R333	ERJ3GEYJ104V	1/16W 100K
R341	ERJ3GEYJ183V	1/16W 18K
R391	ERJ3GEYK106V	1/16W 10M
R392	ERJ3GEYJ104V	1/16W 100K
R393, 394	ERJ6GEYJ104V	1/10W 100K
R395	ERJ3GEYJ684V	1/16W 680K
R396	ERJ3GEYJ103V	1/16W 10K
R397	ERJ3GEYJ684V	1/16W 680K
R398, 399	ERJ3GEYJ123V	1/16W 12K
R400	ERJ3GEYJ103V	1/16W 10K
R401	ERJ3GEYJ474V	1/16W 470K
R402	ERJ6GEYJ4R7V	1/10W 4.7
R403	ERJ3GEYJ103V	1/16W 10K
R407	ERJ3GEYJ102V	1/16W 1K
R509	ERJ3GEYJ223V	1/16W 22K
R601	ERJ3GEYJ104V	1/16W 100K
R602	ERJ3GEYJ103V	1/16W 10K
R603	ERJ3GEYJ392V	1/16W 3.9K
R604	ERJ3GEYJ4R7V	1/16W 4.7
R606	ERJ3GEYJ103V	1/16W 10K
R607	ERJ3GEYJ4R7V	1/16W 4.7
R608	ERJ3GEYJ100V	1/16W 10
		CHIP JUMPERS
RJ301	ERJ3GEY0R00V	CHIP JUMPER
		CAPACITORS
C1	ECSTOGY226RR	4V 22U
C2	ECUV1H681KBV	50V 680P
C3	ECST1AY225RR	10V 2.2U
C5	ECSTOGY156RR	4V 15U
C8	ECUVNE104KBN	25V 0.1U
C9	RCSTOGY685RG	4V 6.8U
C10	ECST1CY105RR	16V 1U
C12	RCSTOGY685RG	4V 6.8U
C13	ECSTOEX107RR	2.5V 100U
C14	RCSX0GY106RE	4V 10U
C15	ECSTOGY475RR	4V 4.7U
C16	ECUV1H102KBV	50V 1000P
C17	ECUVNC104ZFV	16V 0.1U
C18, 19	ECUV1C224MBN	16V 0.22U
C20	ECUV1E103KBV	25V 0.01U
C27, 28	ECUV1C223KBV	16V 0.022U
C29	ECST1AY225RR	10V 2.2U
C31	ECUV1C223KBV	16V 0.022U
C32, 33	ECUV1C224MBN	16V 0.22U
C34, 35	ECUVNC104ZFV	16V 0.1U
C100, 101	ECUV1H102KBV	50V 1000P
C102	ECUV1C223KBV	16V 0.022U
C103	ECUV1C224ZFN	16V 0.22U
C104	ECUV1C183MBV	16V 0.018U
C105	ECUVNC104ZFV	16V 0.1U
C106	ECUV1H682KBV	50V 6800P
C108	ECUV1E123KBV	25V 0.012U
C109	ECUVNC105ZFN	16V 1U
C110	ECUV1C334ZFN	16V 0.33U
C117	ECUV1C154MBN	16V 0.15U
C118	ECUV1E822KBV	25V 8200P
C119	ECUV1E153KBV	25V 0.015U
C121	ECUVNC105ZFN	16V 1U
C122	ECUV1H681KBV	50V 680P
C123	RCSTOGY685RG	4V 6.8U
C124	ECUV1H472KBV	50V 4700P
C125, 126	ECUVNC104ZFV	16V 0.1U
C127, 128	ECUVNC105ZFN	16V 1U
C130	ECSTOEY336RR	2.5V 33U
C131	ECUV1E153MBV	25V 0.015U
C200, 201	ECUV1H102KBV	50V 1000P
C202	ECUV1C223KBV	16V 0.022U
C203	ECUV1C224ZFN	16V 0.22U
C204	ECUV1C183MBV	16V 0.018U
C206	ECUV1H682KBV	50V 6800P
C208	ECUV1E123KBV	25V 0.012U
C209	ECUVNC105ZFN	16V 1U
C210	ECUV1C334ZFN	16V 0.33U
C217	ECUV1C154MBN	16V 0.15U
C218	ECUV1E822KBV	25V 8200P
C219	ECUV1E153KBV	25V 0.015U
C221	ECUVNC105ZFN	16V 1U
C222	ECUV1H681KBV	50V 680P
C223	RCSTOGY685RG	4V 6.8U
C224	ECUV1H472KBV	50V 4700P
C225, 226	ECUVNC104ZFV	16V 0.1U
C230	ECSTOEY336RR	2.5V 33U
C231	ECUV1E153MBV	25V 0.015U
C301	ECSTOEY336RR	2.5V 33U

Ref. No.	Part No.	Values & Remarks
C302, 303	ECUV1H820JCV	50V 82P
C304	RCST1AY155RE	10V 1.5U
C307	ECUV1H472KBV	50V 4700P
C409	ECST1CY105RR	16V 1U

Ref. No.	Part No.	Values & Remarks
C602	ECUVNC105ZFN	16V 1U
C603	ECUVNC104ZFV	16V 0.1U
C604	ECUV1C224ZFN	16V 0.22U
C605	RCST0EV397RE	2.5V 390U

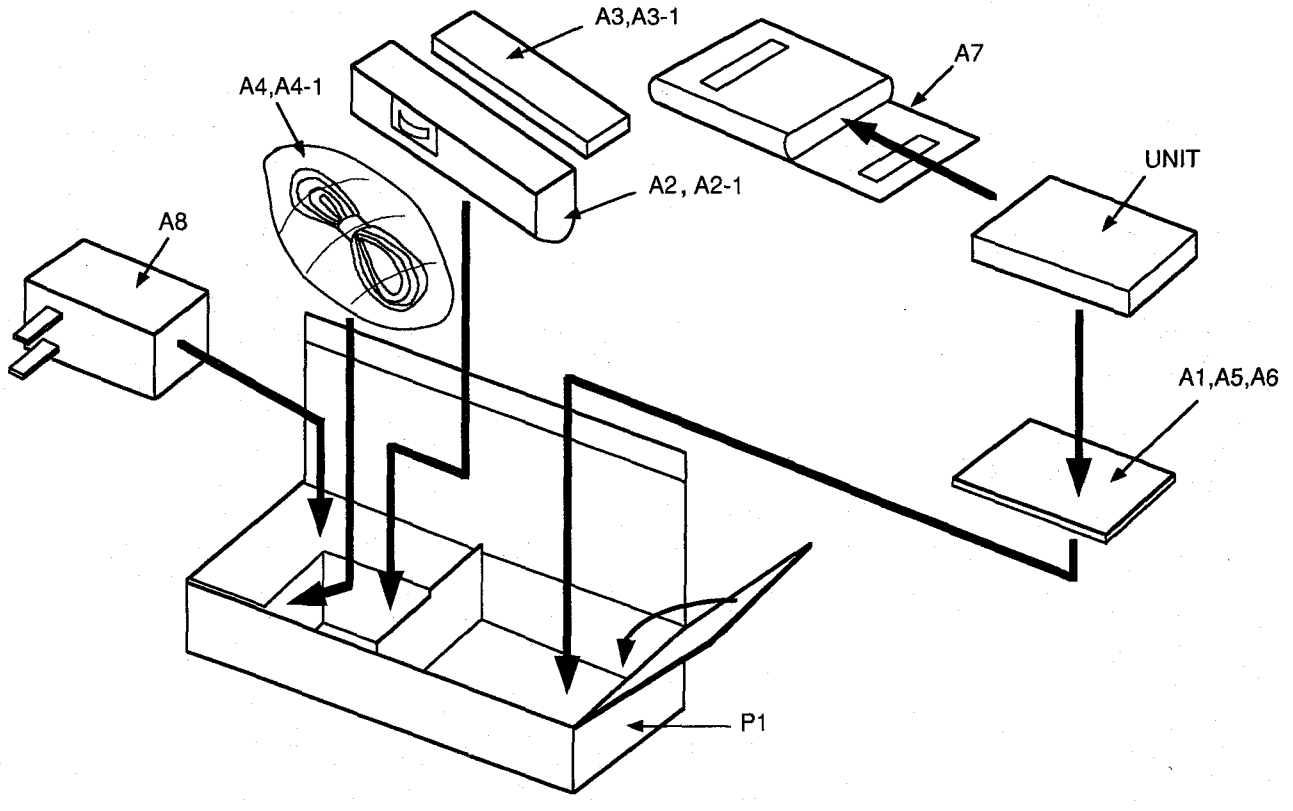
Ref. No.	Part No.	Values & Remarks
C606	ECUVNC104ZFV	16V 0.1U
C607	ECUV1C333MBV	16V 0.033U
C608	ECST0GY226RR	4V 22U

■ REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RHD14008-K	SCREW	
2	RHE5155YA	SCREW	
3	RHE5169YA	SCREW	
4	RHQ0027-K	SCREW	
5	RKK0074-K	BATTERY COVER	
6	RHQ0035-K	SCREW	
7	RMA0731	HOLDER PLATE	
8	RXM0054	LINK PLATE UNIT(R)	
9	RFKLQSX44E-K	CASSETTE LID(A) ASS'Y	
10	RXM0055	LINK PLATE UNIT(L)	
11	RYF0302-K	CASSETTE LID(B) ASS'Y	
12	RYK0496A-K	CABINET ASS'Y	
12A	RGK0663-H	INTERMEDIATE ORNAMENT(A)	
12B	RGV0106-H	VMSS KNOB	
12C	RGV0114-K	B.S/REV MODE, DOLBY NR KNOB	

Ref. No.	Part No.	Part Name & Description	Remarks
12D	RMR0806-K	JACK HOLDER	
13	RGK0664-H	INTERMEDIATE ORNAMENT(B)	
14	RGK0665-H	INTERMEDIATE ORNAMENT(C)	
15	RGK0666-S	SIDE ORNAMENT	
16	RGK0667-A	BUTTON ORNAMENT	
17	RGU1141-S	PLAY/STOP/FF/REW KNOB	
18	RGV0133-S	OPEN LEVER	
19	RHE5119YA	SCREW	
20	RMB0362	AUTO RETURN SPRING	
21	RSQ0044	ZEBRA CONNECTOR	
22	RXQ0358	LOCK UNIT	
23	RJC99004-2	R.BATTERY TERMINAL(-)	
24	RJC99024	R.BATTERY TERMINAL(+)	
25	RJR0012	SHAFT	
26	RHQ0013-1	SCREW	
27	RHE5119ZA	SCREW	
28	RJH9206	CONNECTION TERMINAL(S1)	

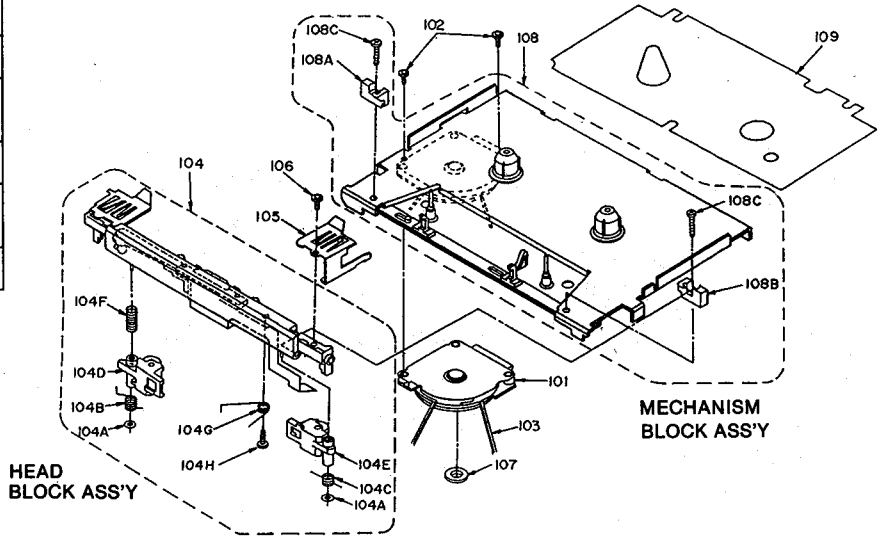
■ PACKAGING



■ MECHANISM PARTS LOCATION

	FWD & REV mode
Wow and flutter	0.3% (WRMS)
Pressure of pinch roller	120±20g
Take-up tension	More than 60g
Playback torque	20^{+15}_{-5}g•cm
FF/REW torque	More than 60g•cm

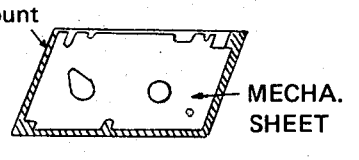
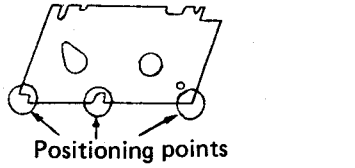
The parts enclosed in the dotted boxes are supplied as a block assembly. Therefore, they are not supplied separately except parts indicated with Ref. No.



■ How to apply the Mechanism Sheet

1. Replacing/Repairing of a mechanism block.
   Replace or repair using a shared mechanism block.(The replacing/repairing procedure remains the same.)
2. If after repairing with a shared mechanism block, a user complains that the mechanism sheet is different from the original, do the following:
   (1) Explain that the number of replacement parts has been consolidated.
   (2) Attach an original mechanism sheet covering the mechanism sheet already attached to the shared mechanism block. (Doubling, doubling does not affect the unit's performance.)
   - Never attach another mechanism sheet to the doubled mechanism sheets.
   - Never remove the already attached sheet. Adhesive material cannot be removed completely.
   - Position the sheet carefully, when attaching it.

■ Attaching instructions

You can attach the mechanism sheet smoothly if you position the attachment line on the side where the head is to be installed.		
Procedure 1: (Preparation)	Peel off the sheet from mount.	
Procedure 2: (Positioning)	Fit the encircled marks of an original sheet with those of sheet already attached.	
Procedure 3: (Attachment)	Attach the sheet.	

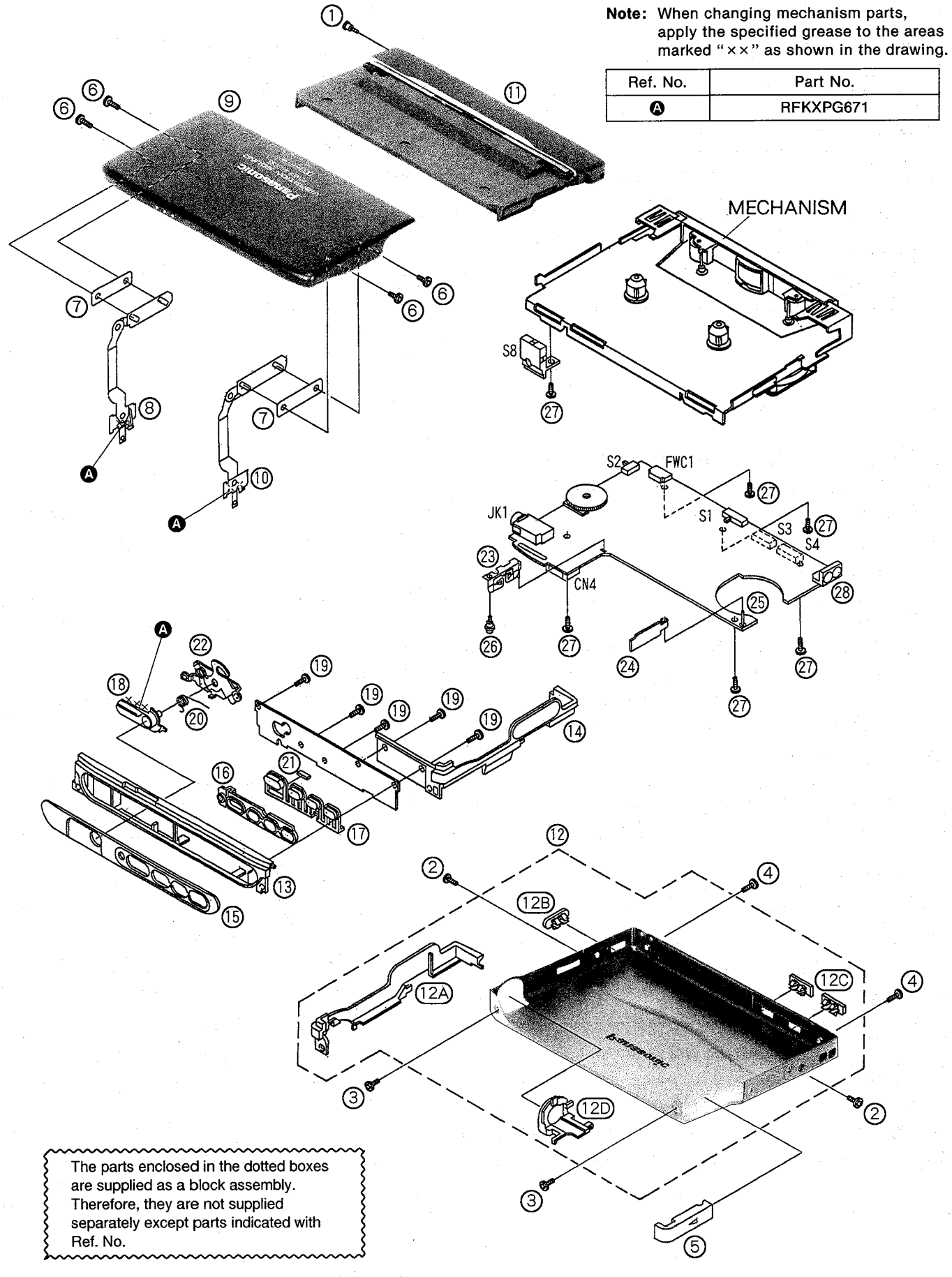
Note:

AR90IV is used in the mechanism of Model RQ-SX44.
When preparing for service, please check the parts list and order necessary parts.

■CABINET PARTS LOCATION

Note: When changing mechanism parts, apply the specified grease to the areas marked "××" as shown in the drawing.

Ref. No.	Part No.
Ⓐ	RFKXPG671



The parts enclosed in the dotted boxes are supplied as a block assembly. Therefore, they are not supplied separately except parts indicated with Ref. No.

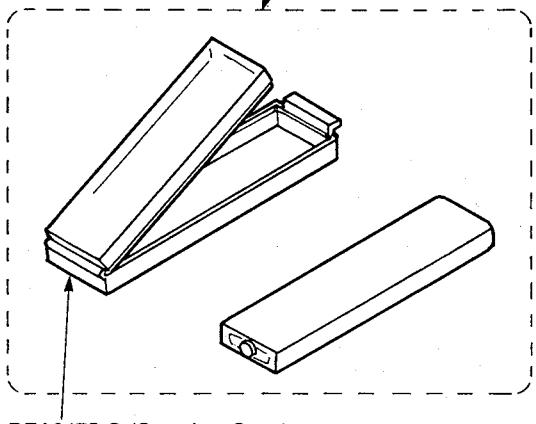
■ SUPPLY OF RECHARGEABLE BATTERY AS REPLACEMENT PARTS

Please take note of the following points relating to Carrying Case to be used for protection of Rechargeable Battery from shorting.

Replacement Parts:

- Rechargeable Battery (RP-BP62EYS1) to be supplied will be provided with Carrying Case (RFA0475-Q).
- No replacement parts will be supplied for Rechargeable Battery without Carrying Case.
- Replacement parts will be supplied for Carrying Case (RFA0475-Q) without Rechargeable Battery.
- To your customers, delivery Rechargeable Battery together with Carrying Case to prevent shorting accidents that may occur when Rechargeable Battery is carried about without Carrying Case.

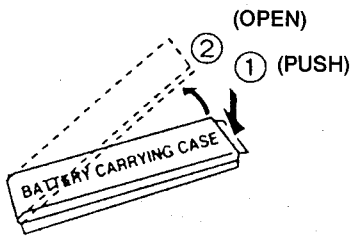
RP-BP62EYS1 (Rechargeable Battery with Carrying Case)



RFA0475-Q (Carrying Case)

■ CAUTION IN USE OF RECHARGEABLE BATTERY

- Take Rechargeable Battery out of Carrying Case and use it.
- Be sure to carry Rechargeable Battery in this Carrying Case.
  If not, it may either heat or ignite by shorting with a metal.



Printed in Japan
H950206800 NH/YU/TM

■ REPLACEMENT PARTS LIST

Notes: *Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
*The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks
		MECHANISM	
101	HPX26NB1DT	MOTOR	
102	XQS14+A18FZ	SCREW	
103	RDV0003	BELT	
104	RXQ0387	HEAD BLOCK ASS'Y	
104A	RNW101ZA	WASHER	
104B	RME0125	PINCH ROLLER SPRING(L)	
104C	RME0005	PINCH ROLLER SPRING(R)	
104D	RXL0004-1	PINCH ROLLER ARM(L)	
104E	RXL0005	PINCH ROLLER ARM(R)	
104F	RMB0245	HEAD ARM SPRING(L)	
104G	RME0114	HEAD ARM SPRING(R)	
104H	RHD14032-1	SCREW	
105	RMA0784	HOLDER(R)	
106	XQN14+A3	SCREW	
107	RHW42002-2	WASHER	
108	RFKRQSX3-K	MECHANISM BLOCK ASS'Y	
108A	RMQ0292	HOLD PIECE(L)	
108B	RMQ0293	HOLD PIECE(R)	
108C	RHD14031	SCREW	
109	RKN0077-K	MECHANISM SHEET	
		PACKING MATERIAL	
P1	RPK0530	PACKING CASE	
		ACCESSORIES	
A1	RFKSQSX44E-K	INSTRUCTION MANUAL ASS'Y	(E)
A1	RQT2818-B	INSTRUCTION MANUAL	(EB)

Ref. No.	Part No.	Part Name & Description	Remarks
A2	RFA0474-K	BATTERY CASE	
A2-1	RKK0071-K	BATTERY COVER	
A3	RP-BP62EYS1	RECHARGEABLE BATTERY	
A3-1	RFA0475-Q	R. BATTERY CARRYING CASE	
A4	RFEV126P-KS	STEREO EARPHONES WITH R. C.	
A4-1	RFA0574-K	CORD CLIP	
A5	RQA0013A	WARRANTY CARD	
A6	RQCB0169	SERVICENTER LIST	
A7	RFC0027-K	CARRYING BAG	
A8	RP-BC155EY-0	CHARGER	(E)⚠
A8	RP-BC155EBYA	CHARGER	(EB)⚠
A9※	RKB205ZA-0	EAR PADS	
		<GRASE OR JIG/TOOL>	
		TEST TAPE	
SA1	QZZCWAT	TAPE SPEED ADJ.	
		EXTENSION CORD	
SA2	RFKZ0002	EXTENSION CORD	
		MORYCOAT GREASE	
SA3	RFKXPG671	MORYCOAT GREASE PG671	
		<PRINTED CIRCUIT BOARDS	
		ASS'Y>	
PCB1	REP1987A	OPERATION P. C. B.	(RTL)
PCB2	REP1989A	MAIN P. C. B.	(RTL)

※ This item is not attached to merchandise, but it is supplied as a replacement part.

- The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.